

GRILLES

OF PERFORATED METAL.



THE HARRINGTON & KING
CHICAGO PERFORATING CO. NEW YORK

Represented by
Variety Building Products Co.
2615-17 Dickson Street
P. A. 3375 St. Louis, Mo.

Digitized by:



ASSOCIATION
FOR
PRESERVATION
TECHNOLOGY,
INTERNATIONAL

www.apti.org

BUILDING
TECHNOLOGY
HERITAGE
LIBRARY

<https://archive.org/details/buildingtechnologyheritagelibrary>

From the collection of:

NATIONAL
BUILDING
ARTS
CENTER

<http://web.nationalbuildingarts.org>

— Represented by —
Variety Building Products Co.,
2615-17 DeKalb Street,
LA. 3375 St. Louis, Mo.

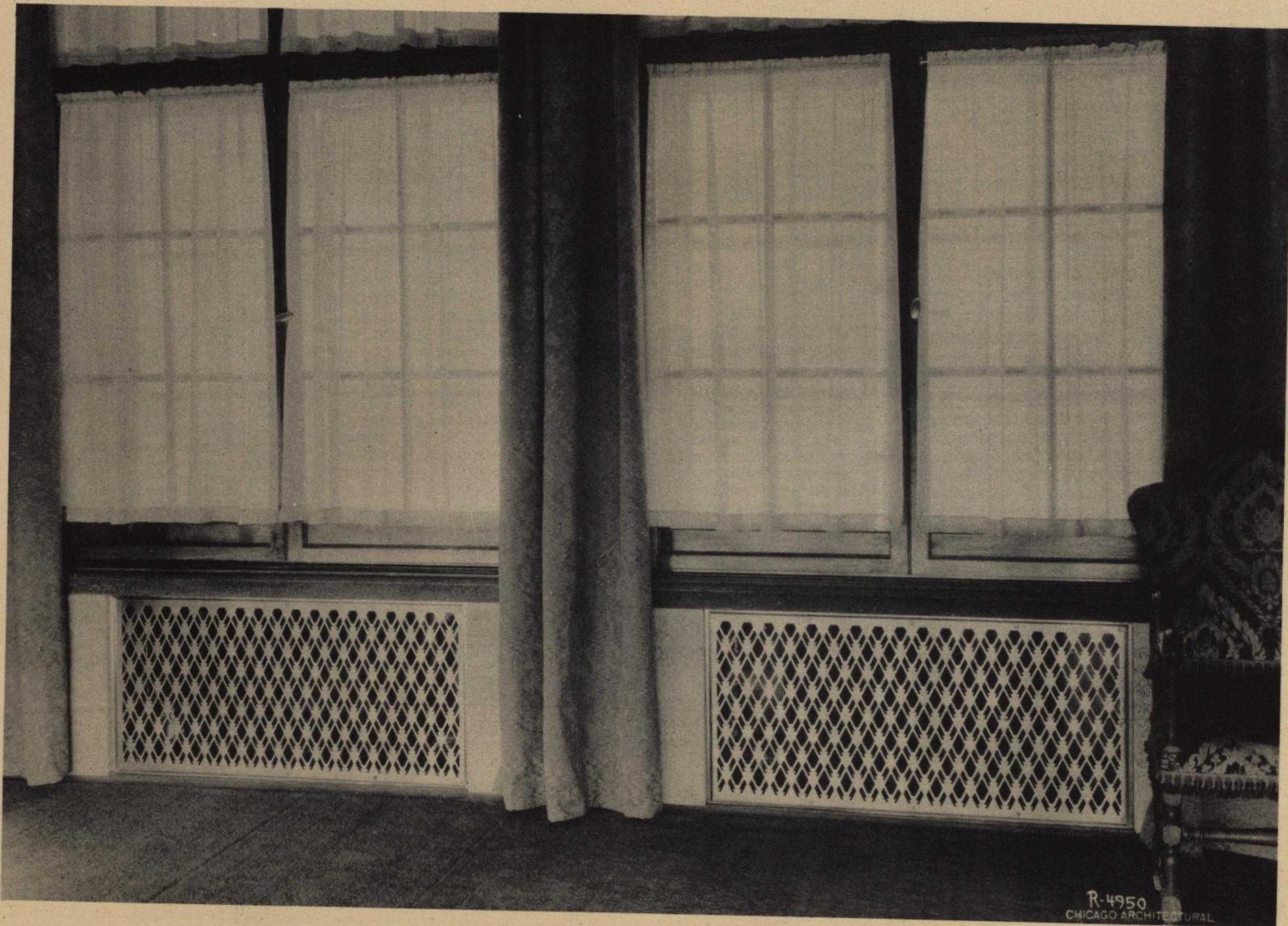
THE HARRINGTON & KING PERFORATING CO.

GRILLES OF PERFORATED METAL CATALOG AND HANDBOOK

Issue No. 32

CHICAGO: Main Office and Factory, 5655 Fillmore Street

NEW YORK CITY: Eastern Sales Office, 114 Liberty Street



R-4950
CHICAGO ARCHITECTURAL

Grilles of polished commercial bronze, Style HK-725. Private office of Mr. Edward J. Mehren, President of Portland Cement Association, Chicago

GENERAL INFORMATION

Our Product: The manufacture of perforated metals has been our sole business for fifty years, during which period we have specialized in the production of punched grilles of standard, special and original designs.

Our Facilities: A new plant equipped with the finest and most modern machinery, operated by skilled workmen and directed by an experienced organization, insures our customers of a product of extraordinary quality.

Designs: We offer not only a complete selection of standard designs but also a number of original designs, many of which are of modern motif created especially for production in the white metals. These new designs are the result of a nation-wide grille design contest which was supplemented by the work of our own artists. These modern designs mark a new era in the history of architectural grilles because they represent the first successful endeavor by a manufacturer of punched grilles to create something new, original, attractive, and in keeping with the spirit of the moderne.

Dimensions and Shapes: There is practically no limitation to the size, shape or form of grilles which we can furnish. Grilles may be rectangular, square, round or odd in shape, and flat, curved or angular in form. Since they are all made of unbreakable wrought metal plates they can be very large without any danger of fracturing.

Quality: The quality of a grille is indicated by its flatness, its clean cut holes free from burrs, the smoothness of its surface, the fineness of its finish, the symmetry and alignment of its margins, and the care and precision with which it is produced. Our reputation for a half century has been built on a foundation of accuracy and care, intelligently directed by an organization whose aim is to please its customers. That is why experienced architects specify "Grilles by Harrington & King" in order that they may be assured they are getting the best.

Thicknesses: When grilles are produced in cast metals, it is necessary that they be very thick and heavy because cast metals are exceedingly fragile. Punched grilles; however, are unbreakable and so they need seldom be thicker than $\frac{1}{8}$ ", although we are prepared to furnish them $\frac{3}{16}$ " and even $\frac{1}{4}$ " when such thicknesses are thought advisable for certain decorative effects. The thickness limitations vary with different designs and different metals, so it is advisable to get in touch with us when this question arises.

Finishes: We use only metal with surfaces free from all blemishes, so our grilles can be finished to meet the most exacting requirements. Usual finishes are as follows: *Steel*—primed, painted, or plated. *Brass and Bronze*—natural (dull or polished) oxidized to a statuary bronze, or finished to match any sample. *White metals*—natural (either bright or satin finish).

Materials: All of our grille designs can be furnished in steel, brass and bronze, and also in the white metals—aluminum, monel metal, nickel silver and stainless steel.

Cost: Our punched grilles are less expensive than any other type of grille. No patterns are required. With specialized production facilities we are able to furnish most elaborate designs in the costliest metals at a fraction of the price of cast grilles.

Frames: We can furnish frames of any description. On pages 48 and 49 we show a number of suggestions for frame construction. Be sure to specify the frame construction required, or show by a sketch just what is wanted.

Screw Holes: Grilles will not have screw holes unless they are ordered. When they are ordered the specifications should indicate whether they are to be plain or countersunk, also the spacing, as otherwise the holes will be countersunk on from 12" to 15" centers.

Hand Holes: We have developed an ingenious and substantial construction for invisible hand hole doors through which radiator valves may be reached. Specifications should indicate location of doors, which can best be accomplished by the use of a sketch.

Registers: We are prepared to furnish complete registers of any description with standard faces, or faces of any of our designs.

Deliveries: We carry a very large stock of metals from which we can quickly make up nearly any grille specification. When the size of the order, or of individual grilles is such that a special rolling of the metal seems advisable, we handle the specification with very little delay through our special mill connections.

Stock Grilles—Grilframe: Experience has proved that grilles must generally be of special sizes, which makes it impossible to create a stock. We do, however, carry a large stock of steel sheets 36" x 120" of designs such as Cane, Perfex, Style A-One, Clover Leaf and Round, $\frac{1}{2}$ " Plain Lattice, and Style Y in light gauges, and of nearly all the other standard designs in sheets 48" x 120" of heavier gauges. These sheets have no blank margins but they can be cut to size and held in place with wood stops to cover the rough edges, or they can be fabricated with our attractive *Grilframe* construction, which greatly enhances the appearance of the grille. *Grilframe* parts and grille sheets are carried in stock by agents throughout the country who are prepared to fabricate to any size and so avoid the time and expense of a made-to-order product. More detailed information is given on page 46 and in our special *Grilframe* booklet, which will be sent on request.

Specifications: It is important that we know just what is wanted before quoting prices or preparing an order; so please check against the following items:

- (1) Quantity.
- (2) Dimensions: Whether opening or overall sizes—it is assumed that dimensions are overall unless specified to the contrary.
- (3) Width and Height: Which dimensions are width and which are height—it is customary to give the width dimension first.
- (4) Design.
- (5) Minimum margins.
- (6) Kind of metal.
- (7) Gauge or thickness.
- (8) Finish: Primed, painted, plated, polished (bright or satin.)
- (9) Screw holes: Plain or countersunk.
- (10) Hand hole doors: Indicate location.
- (11) Frames: See pages 48 and 49.

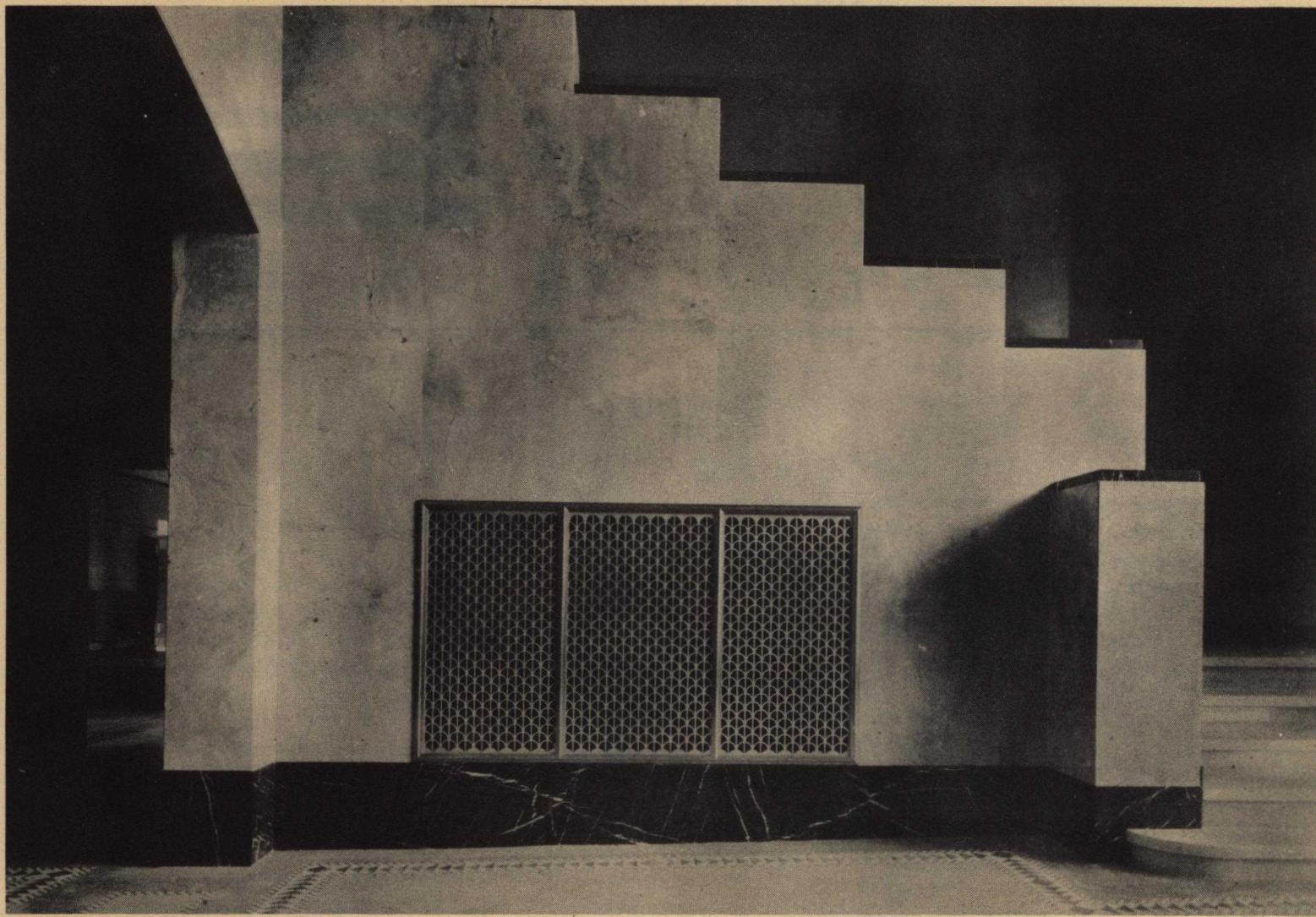
TABLE OF THICKNESSES

	U. S. S. Gauge	Nearest B&S Gauge		U. S. S. Gauge	Nearest B&S Gauge
.037"		No. 20	No. 19	.140"	No. 10
.050"		No. 18	No. 16	.171"	No. 8
.062"		No. 16	No. 14	.187"	3/16"
.078"		No. 14	No. 12		3/16"
.109"		No. 12	No. 10		

It is trade custom to use the U. S. S. Gauge for steel, stainless steel, and monel metal, and the B&S Gauge for brass, bronze, aluminum, and nickel silver. Unless indicated to the contrary, this trade custom will be applied to all specifications.

INDEX

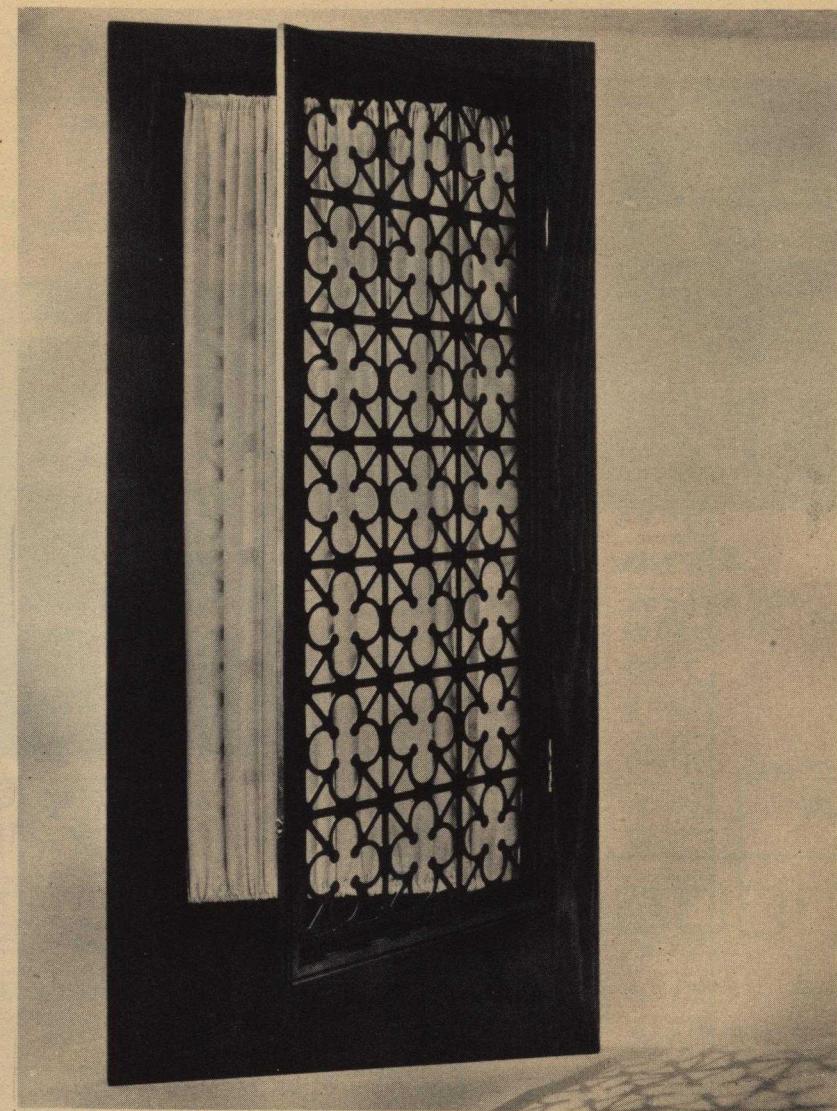
Page	Page
½" Plain Lattice— $\frac{3}{16}$ " Bridges.....8	Style M—Wheel Design.....21
½" Plain Lattice— $\frac{1}{4}$ " Bridges.....8	Style MK—Plain Lattice with M border.....41
¾" Plain Lattice— $\frac{1}{4}$ " Bridges.....8	Style P—Metal Cane.....44
¾" Plain Lattice— $\frac{1}{4}$ " Bridges.....10	Style Q—Divided Fish Scale.....35
1" Plain Lattice— $\frac{1}{4}$ " Bridges.....10	Style S—Vertical Slots.....38
1 $\frac{3}{4}$ " Plain Lattice— $\frac{5}{16}$ " Bridges.....10	Style U—Large Gothic Motif.....40
½" Diagonal Lattice— $\frac{3}{16}$ " Bridges.....12	Style V—Gothic (small).....24
½" Diagonal Lattice— $\frac{1}{4}$ " Bridges.....13	Style W—Metalace.....43
Style A—Square Link (large).....15	Style Y—Embossed Flower.....45
Style A1—Square Link (small).....44	Style Z—Diagonal Cross (large).....20
Style C—Gothic (large).....25	Perfex—Diagonal Cross (small).....45
Style E—Diamond.....14	Style HK-111 (new).....39
Style F—Cloverleaf.....23	Style HK-230 (new-original).....34
Style HW—Fish Scale (small).....36	Style HK-233 (new-original).....41
Style I—Cloverleaf and Round.....22	Style HK-705 (new-original-modern).....30
Style J—Fish Scale (large).....37	Style HK-710 (new-original-modern).....33
Style L—Union Jack 2 $\frac{1}{2}$ " unit.....17	Style HK-711 (new-original-modern).....33
Style L2—Union Jack 1 $\frac{3}{4}$ " unit.....16	Style HK-712 (new original-modern).....33
Style L3—Union Jack 3" unit.....18	Style HK-713 (new-original-modern).....33
Style NL—Style L with border slots.....41	Style HK-714 (new-original-modern).....33
Style LT—Slots with L border.....41	Style HK-715 (new-original-modern).....32
Style LX—Grecian.....19	
	Style HK-720 (new-original-modern).....31
	Style HK-723 (new-original-modern).....41
	Style HK-725 (new-original-modern).....28
	Style HK-745 (new-original-modern).....26
	Style HK-750 (new-original-modern).....29
	Style HK-790 (new-original-modern).....27
	Sanitary Design.....43
	Louvers, Fixed.....42
	Louvers, Movable.....43
	Doors—Invisible Hand Holes.....43
	Frames, Angle Iron.....48
	Grilframe construction.....46
	Grille Panels for Concealed Radiators.....47
	Hinges.....49
	Odd Shaped Grilles.....43
	Perforated Metals—Rounds & Slots.....52
	Radiator Enclosure Design.....50
	Radiator Enclosures—Metal.....51
	Registers.....43
	Screw Holes.....48
	Specifications.....4
	Thickness of Metals.....5



Entrance lobby of the Fine and Industrial Arts School at Newark, New Jersey.
Showing our Style Q design in aluminum, framed with Anaconda moulding No. 1813K of polished brass. Architects, Guilbert & Betelle, Newark, N. J.

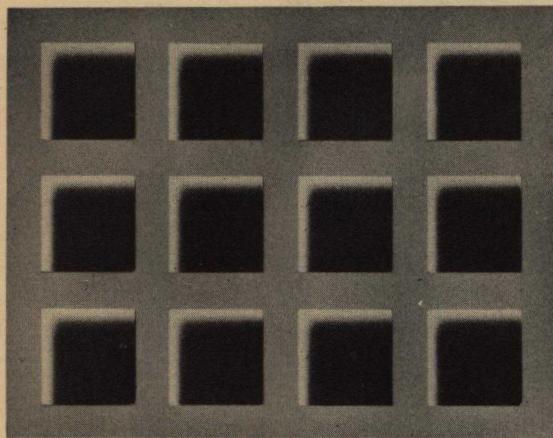


In the handsome new Victor Lawson Y. M. C. A. building, Chicago, many of our grilles were selected by the architects, Perkins, Chatten and Hammond. This particular one is our Style HK 725 painted to match the wall.

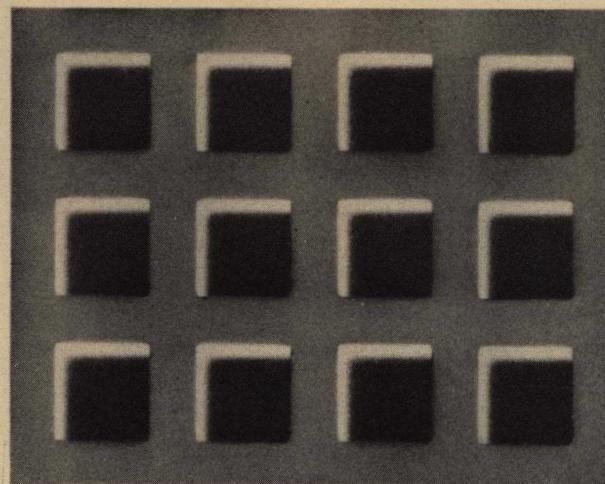
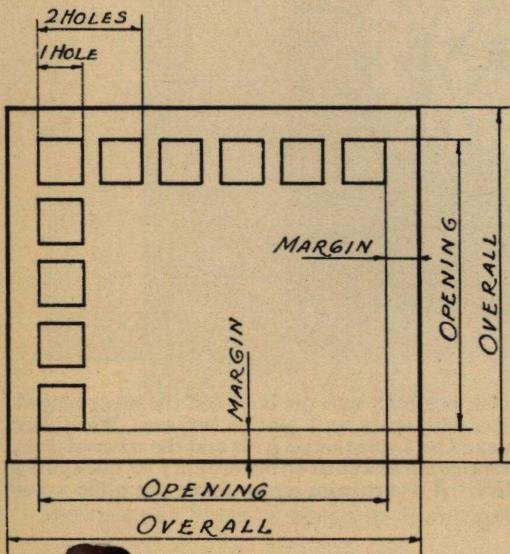


This door is constructed with two panels, one built into the door and the other hinged. For interior use, both panels may be grilles with space for a curtain between. When used as an outside door the stationary panel should be a substantial grille and the other of glass.

With the glass panel open a means for ventilation as well as an opportunity for questioning strangers is provided with perfect security. A woven wire screen inside the grille would make a separate screen door unnecessary.

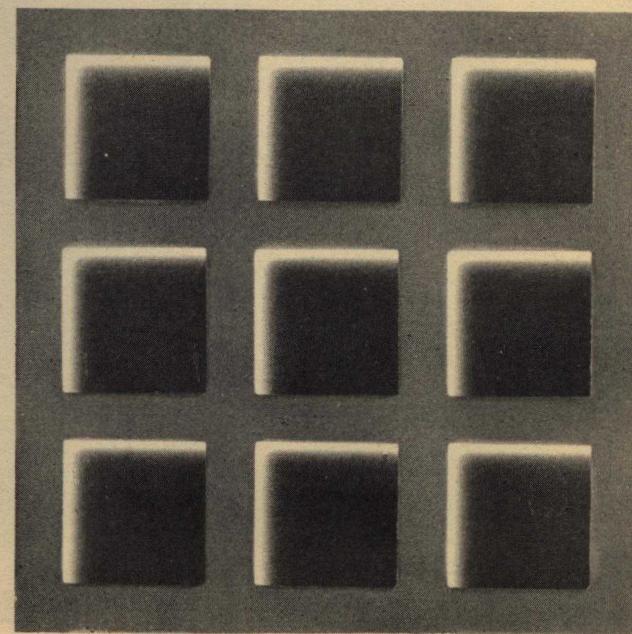
1/2" AND 3/4" PLAIN LATTICE GRILLES

ACTUAL SIZE
1/2" HOLES, 3/16" BRIDGES,
53% OPEN



ACTUAL SIZE
1/2 HOLES, 1/4" BRIDGES, 45% OPEN

SEE OPPOSITE PAGE
FOR OPENING SIZES



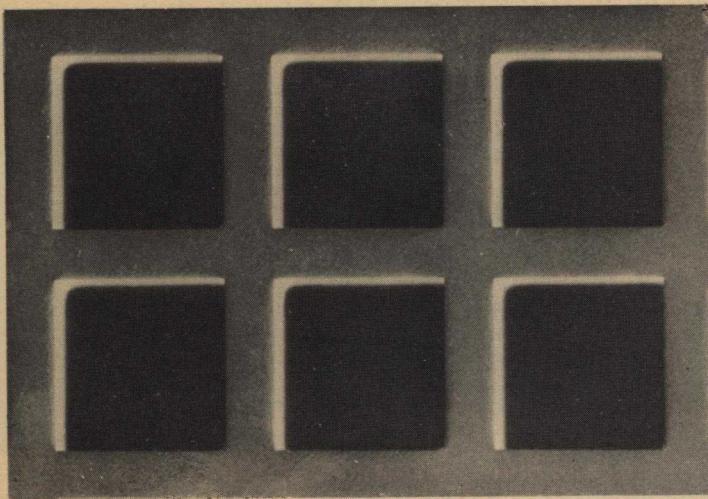
ACTUAL SIZE
3/4" HOLES, 1/4" BRIDGES.
57% OPEN

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.
WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,

TABLE OF OPENING SIZES - $\frac{1}{2}$ " AND $\frac{3}{4}$ " PLAIN LATTICE GRILLES

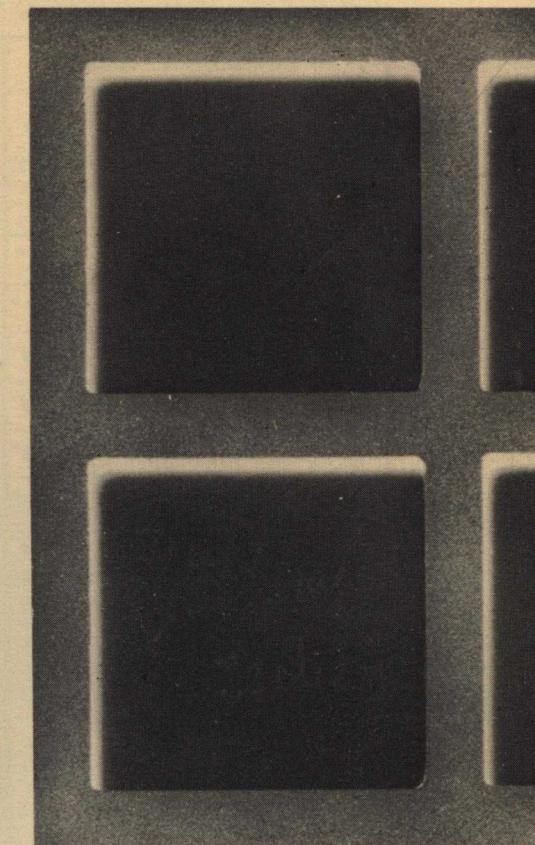
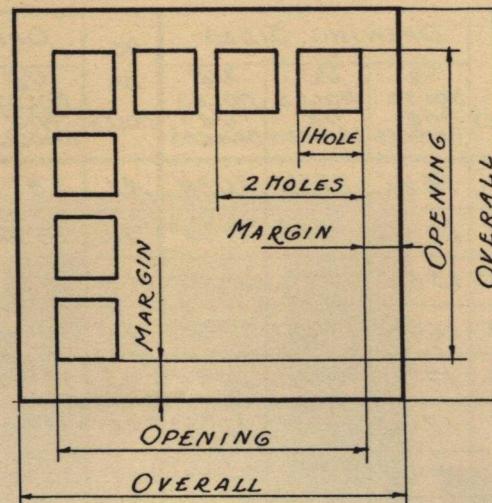
NO OF HOLES	OPENING SIZES														
	$\frac{1}{2}$ " HOLES $\frac{3}{16}$ " BRIDGES	$\frac{1}{2}$ " HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{1}{4}$ " BRIDGES		$\frac{1}{2}$ " HOLES $\frac{3}{16}$ " BRIDGES	$\frac{1}{2}$ " HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{1}{4}$ " BRIDGES		$\frac{1}{2}$ " HOLES $\frac{3}{16}$ " BRIDGES	$\frac{1}{2}$ " HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{1}{4}$ " BRIDGES		$\frac{1}{2}$ " HOLES $\frac{3}{16}$ " BRIDGES	$\frac{1}{2}$ " HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{1}{4}$ " BRIDGES
1	$\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	21	$14\frac{1}{4}$ "	$15\frac{1}{2}$ "	$20\frac{3}{4}$ "	41	28"	$30\frac{1}{2}$ "	$40\frac{3}{4}$ "	61	$41\frac{3}{4}$ "	$45\frac{1}{2}$ "	$60\frac{3}{4}$ "
2	$1\frac{3}{16}$ "	$1\frac{1}{4}$ "	$1\frac{3}{4}$ "	22	$14\frac{15}{16}$ "	$16\frac{1}{4}$ "	$21\frac{3}{4}$ "	42	$28\frac{7}{16}$ "	$31\frac{1}{4}$ "	$41\frac{3}{4}$ "	62	$42\frac{7}{16}$ "	$46\frac{1}{4}$ "	$61\frac{3}{4}$ "
3	$1\frac{7}{8}$ "	2"	$2\frac{3}{4}$ "	23	$15\frac{5}{16}$ "	17"	$22\frac{3}{4}$ "	43	$29\frac{3}{8}$ "	32"	$42\frac{3}{4}$ "	63	$43\frac{1}{8}$ "	47"	$62\frac{3}{4}$ "
4	$2\frac{9}{16}$ "	$2\frac{3}{4}$ "	$3\frac{3}{4}$ "	24	$16\frac{5}{16}$ "	$17\frac{3}{4}$ "	$23\frac{3}{4}$ "	44	$30\frac{1}{16}$ "	$32\frac{3}{4}$ "	$43\frac{3}{4}$ "	64	$43\frac{3}{16}$ "	$47\frac{3}{4}$ "	$63\frac{3}{4}$ "
5	$3\frac{1}{4}$ "	$3\frac{1}{2}$ "	$4\frac{3}{4}$ "	25	17"	$18\frac{1}{2}$ "	$24\frac{3}{4}$ "	45	$30\frac{3}{4}$ "	$33\frac{1}{2}$ "	$44\frac{3}{4}$ "	65	$44\frac{1}{2}$ "	$48\frac{1}{2}$ "	$64\frac{3}{4}$ "
6	$3\frac{15}{16}$ "	$4\frac{1}{4}$ "	$5\frac{3}{4}$ "	26	$17\frac{15}{16}$ "	$19\frac{1}{4}$ "	$25\frac{3}{4}$ "	46	$31\frac{7}{16}$ "	$34\frac{1}{4}$ "	$45\frac{3}{4}$ "	66	$45\frac{3}{16}$ "	$49\frac{1}{4}$ "	$65\frac{3}{4}$ "
7	$4\frac{5}{8}$ "	5"	$6\frac{3}{4}$ "	27	$18\frac{3}{8}$ "	20"	$26\frac{3}{4}$ "	47	$32\frac{1}{8}$ "	35"	$46\frac{3}{4}$ "	67	$45\frac{7}{8}$ "	50"	$66\frac{3}{4}$ "
8	$5\frac{5}{16}$ "	$5\frac{3}{4}$ "	$7\frac{3}{4}$ "	28	$19\frac{15}{16}$ "	$20\frac{3}{4}$ "	$27\frac{3}{4}$ "	48	$32\frac{3}{16}$ "	$35\frac{3}{4}$ "	$47\frac{3}{4}$ "	68	$46\frac{9}{16}$ "	$50\frac{3}{4}$ "	$67\frac{3}{4}$ "
9	6"	$6\frac{1}{2}$ "	$8\frac{3}{4}$ "	29	$19\frac{3}{4}$ "	$21\frac{1}{2}$ "	$28\frac{3}{4}$ "	49	$33\frac{1}{2}$ "	$36\frac{1}{2}$ "	$48\frac{3}{4}$ "	69	$47\frac{1}{4}$ "	$51\frac{1}{2}$ "	$68\frac{3}{4}$ "
10	$6\frac{1}{16}$ "	$7\frac{1}{4}$ "	$9\frac{3}{4}$ "	30	$20\frac{7}{16}$ "	$22\frac{1}{4}$ "	$29\frac{3}{4}$ "	50	$34\frac{3}{16}$ "	$37\frac{1}{4}$ "	$49\frac{3}{4}$ "	70	$47\frac{15}{16}$ "	$52\frac{1}{4}$ "	$69\frac{3}{4}$ "
11	$7\frac{3}{8}$ "	8"	$10\frac{3}{4}$ "	31	$21\frac{1}{8}$ "	23"	$30\frac{3}{4}$ "	51	$34\frac{7}{8}$ "	38"	$50\frac{3}{4}$ "	71	$48\frac{5}{16}$ "	53"	$70\frac{3}{8}$ "
12	$8\frac{1}{16}$ "	$8\frac{3}{4}$ "	$11\frac{3}{4}$ "	32	$21\frac{15}{16}$ "	$23\frac{3}{4}$ "	$31\frac{3}{4}$ "	52	$35\frac{9}{16}$ "	$38\frac{3}{4}$ "	$51\frac{3}{4}$ "	72	$49\frac{5}{16}$ "	$53\frac{3}{4}$ "	$71\frac{3}{4}$ "
13	$8\frac{3}{4}$ "	$9\frac{1}{2}$ "	$12\frac{3}{4}$ "	33	$22\frac{1}{2}$ "	$24\frac{1}{2}$ "	$32\frac{3}{4}$ "	53	$36\frac{1}{4}$ "	$39\frac{1}{2}$ "	$52\frac{3}{4}$ "	73	50"	$54\frac{1}{2}$ "	$72\frac{3}{4}$ "
14	$9\frac{7}{16}$ "	$10\frac{1}{4}$ "	$13\frac{3}{4}$ "	34	$23\frac{3}{16}$ "	$25\frac{1}{4}$ "	$33\frac{3}{4}$ "	54	$36\frac{15}{16}$ "	$40\frac{1}{4}$ "	$53\frac{3}{4}$ "	74	$50\frac{11}{16}$ "	$55\frac{1}{4}$ "	$73\frac{3}{4}$ "
15	$10\frac{1}{8}$ "	11"	$14\frac{3}{4}$ "	35	$23\frac{7}{8}$ "	26"	$34\frac{3}{4}$ "	55	$37\frac{5}{8}$ "	41"	$54\frac{3}{4}$ "	75	$51\frac{3}{8}$ "	56"	$74\frac{3}{4}$ "
16	$10\frac{13}{16}$ "	$11\frac{3}{4}$ "	$15\frac{3}{4}$ "	36	$24\frac{9}{16}$ "	$26\frac{3}{4}$ "	$35\frac{3}{4}$ "	56	$38\frac{5}{16}$ "	$41\frac{3}{4}$ "	$55\frac{3}{4}$ "	76	$52\frac{1}{16}$ "	$56\frac{1}{4}$ "	$75\frac{3}{4}$ "
17	$11\frac{1}{2}$ "	$12\frac{1}{2}$ "	$16\frac{3}{4}$ "	37	$25\frac{1}{4}$ "	$27\frac{1}{2}$ "	$36\frac{3}{4}$ "	57	39"	$42\frac{1}{2}$ "	$56\frac{3}{4}$ "	77	$52\frac{3}{4}$ "	$57\frac{1}{2}$ "	$76\frac{3}{4}$ "
18	$12\frac{3}{16}$ "	$13\frac{1}{4}$ "	$17\frac{3}{4}$ "	38	$25\frac{15}{16}$ "	$28\frac{1}{4}$ "	$37\frac{3}{4}$ "	58	$39\frac{11}{16}$ "	$43\frac{1}{4}$ "	$57\frac{3}{4}$ "	78	$53\frac{7}{16}$ "	$58\frac{1}{4}$ "	$77\frac{3}{4}$ "
19	$12\frac{7}{8}$ "	14"	$18\frac{3}{4}$ "	39	$26\frac{5}{8}$ "	29"	$38\frac{3}{4}$ "	59	$40\frac{1}{8}$ "	44"	$58\frac{3}{4}$ "	79	$54\frac{1}{8}$ "	59"	$78\frac{3}{4}$ "
20	$13\frac{9}{16}$ "	$14\frac{3}{4}$ "	$19\frac{3}{4}$ "	40	$27\frac{5}{16}$ "	$29\frac{3}{4}$ "	$39\frac{3}{4}$ "	60	$41\frac{1}{16}$ "	$44\frac{3}{4}$ "	$59\frac{3}{4}$ "	80	$54\frac{13}{16}$ "	$59\frac{3}{4}$ "	$79\frac{3}{4}$ "

TABLE CAN BE EXTENDED BY ADDING FOR EACH EXTRA HOLE AS FOLLOWS -
 FOR $\frac{1}{2}$ " PL. $\frac{3}{16}$ " BRIDGES ADD $\frac{1}{16}$ " FOR $\frac{1}{2}$ " PL. $\frac{1}{4}$ " BRIDGES ADD $\frac{3}{4}$ " FOR $\frac{3}{4}$ " PL. $\frac{1}{4}$ " BRIDGES ADD 1"

7/8"-1" AND 1 3/4" PLAIN LATTICE GRILLES

ACTUAL SIZE.

$7/8$ " HOLES, $1/4$ " BRIDGES, 60% OPEN,

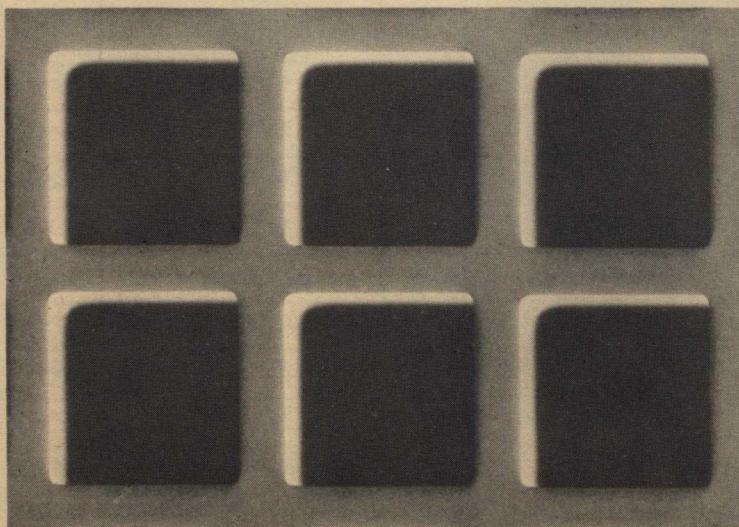


NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:

DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS.

KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,



ACTUAL SIZE
 1 " HOLES, $5/16$ " BRIDGES, 72% OPEN

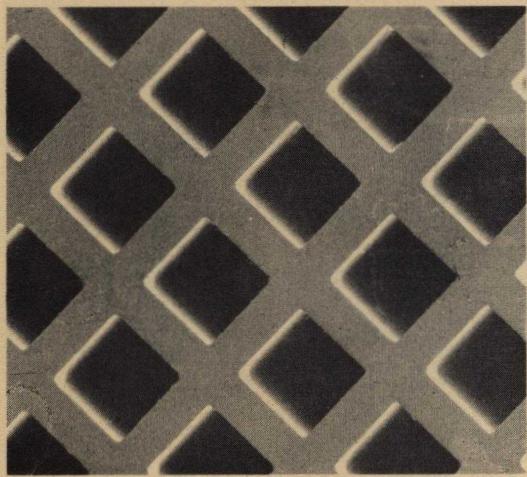
ACTUAL SIZE
 $1 3/4$ " HOLES, $5/16$ " BRIDGES,
72% OPEN

SEE OPPOSITE PAGE
FOR OPENING SIZES

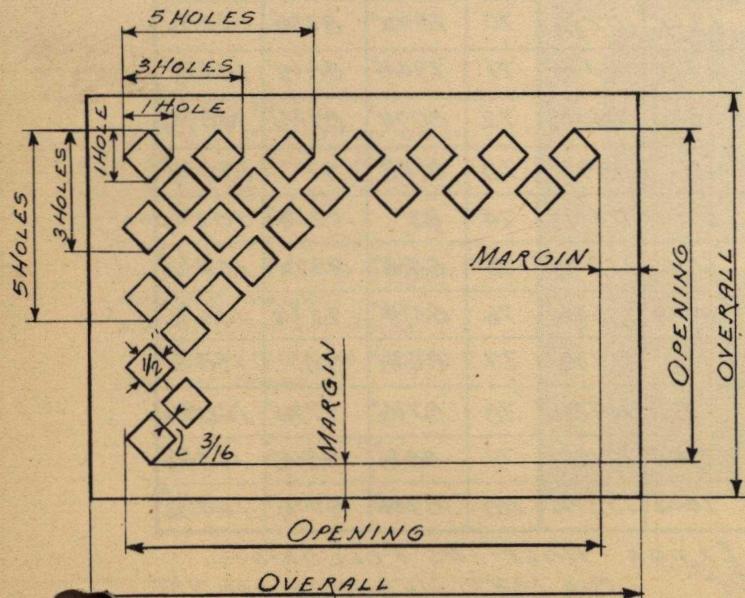
TABLE OF OPENING SIZES - $\frac{1}{8}$ " - 1" AND $\frac{3}{4}$ " PLAIN LATTICE GRILLES

NO OF HOLES	OPENING SIZES														
	$\frac{1}{8}$ " HOLES $\frac{1}{4}$ " BRIDGES	1" HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{5}{16}$ " BRIDGES		$\frac{1}{8}$ " HOLES $\frac{1}{4}$ " BRIDGES	1" HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{5}{16}$ " BRIDGES		$\frac{1}{8}$ " HOLES $\frac{1}{4}$ " BRIDGES	1" HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{5}{16}$ " BRIDGES		$\frac{1}{8}$ " HOLES $\frac{1}{4}$ " BRIDGES	1" HOLES $\frac{1}{4}$ " BRIDGES	$\frac{3}{4}$ " HOLES $\frac{5}{16}$ " BRIDGES
1	$\frac{1}{8}$ "	1"	$\frac{3}{4}$ "	21	23 $\frac{3}{8}$ "	26"	43"	41	45 $\frac{7}{8}$ "	51"	84 $\frac{1}{4}$ "	61	68 $\frac{3}{8}$ "	76"	125 $\frac{1}{2}$ "
2	2"	2 $\frac{1}{4}$ "	3 $\frac{3}{16}$ "	22	24 $\frac{1}{2}$ "	27 $\frac{1}{4}$ "	45 $\frac{1}{16}$ "	42	47"	52 $\frac{1}{4}$ "	86 $\frac{5}{16}$ "	62	69 $\frac{1}{2}$ "	77 $\frac{1}{4}$ "	127 $\frac{9}{16}$ "
3	3 $\frac{1}{8}$ "	3 $\frac{1}{2}$ "	5 $\frac{7}{8}$ "	23	25 $\frac{5}{8}$ "	28 $\frac{1}{2}$ "	47 $\frac{1}{8}$ "	43	48 $\frac{1}{8}$ "	53 $\frac{1}{2}$ "	88 $\frac{3}{16}$ "	63	70 $\frac{5}{8}$ "	78 $\frac{1}{2}$ "	129 $\frac{5}{8}$ "
4	4 $\frac{1}{4}$ "	4 $\frac{3}{4}$ "	7 $\frac{9}{16}$ "	24	26 $\frac{3}{4}$ "	29 $\frac{3}{4}$ "	49 $\frac{3}{16}$ "	44	49 $\frac{1}{4}$ "	54 $\frac{3}{4}$ "	90 $\frac{3}{16}$ "	64	71 $\frac{3}{4}$ "	79 $\frac{3}{4}$ "	131 $\frac{11}{16}$ "
5	5 $\frac{3}{8}$ "	6"	10	25	27 $\frac{1}{8}$ "	31"	51 $\frac{1}{4}$ "	45	50 $\frac{3}{8}$ "	56"	92 $\frac{1}{2}$ "	65	72 $\frac{7}{8}$ "	81"	133 $\frac{3}{4}$ "
6	6 $\frac{1}{2}$ "	7 $\frac{1}{4}$ "	12 $\frac{11}{16}$ "	26	29"	32 $\frac{1}{4}$ "	53 $\frac{5}{16}$ "	46	51 $\frac{1}{2}$ "	57 $\frac{1}{4}$ "	94 $\frac{9}{16}$ "	66	74"	82 $\frac{1}{4}$ "	135 $\frac{3}{16}$ "
7	7 $\frac{5}{8}$ "	8 $\frac{1}{2}$ "	14 $\frac{1}{8}$ "	27	30 $\frac{1}{8}$ "	33 $\frac{1}{2}$ "	55 $\frac{3}{8}$ "	47	52 $\frac{5}{8}$ "	58 $\frac{1}{2}$ "	96 $\frac{5}{8}$ "	67	75 $\frac{1}{8}$ "	83 $\frac{1}{2}$ "	137 $\frac{7}{8}$ "
8	8 $\frac{3}{4}$ "	9 $\frac{3}{4}$ "	16 $\frac{9}{16}$ "	28	31 $\frac{1}{4}$ "	34 $\frac{3}{4}$ "	57 $\frac{7}{16}$ "	48	53 $\frac{3}{4}$ "	59 $\frac{3}{4}$ "	98 $\frac{11}{16}$ "	68	76 $\frac{1}{4}$ "	84 $\frac{3}{4}$ "	139 $\frac{5}{16}$ "
9	9 $\frac{7}{8}$ "	11"	18 $\frac{1}{4}$ "	29	32 $\frac{3}{8}$ "	36"	59 $\frac{1}{2}$ "	49	54 $\frac{7}{8}$ "	61"	100 $\frac{3}{4}$ "	69	77 $\frac{3}{8}$ "	86"	142"
10	11"	12 $\frac{1}{4}$ "	20 $\frac{5}{16}$ "	30	33 $\frac{1}{2}$ "	37 $\frac{1}{4}$ "	61 $\frac{9}{16}$ "	50	56"	62 $\frac{1}{4}$ "	102 $\frac{3}{16}$ "	70	78 $\frac{1}{2}$ "	87 $\frac{1}{4}$ "	144 $\frac{1}{16}$ "
11	12 $\frac{1}{8}$ "	13 $\frac{1}{2}$ "	22 $\frac{3}{8}$ "	31	34 $\frac{5}{8}$ "	38 $\frac{1}{2}$ "	63 $\frac{5}{8}$ "	51	57 $\frac{1}{8}$ "	63 $\frac{1}{2}$ "	104 $\frac{7}{8}$ "	71	79 $\frac{5}{8}$ "	88 $\frac{1}{2}$ "	146 $\frac{1}{8}$ "
12	13 $\frac{1}{4}$ "	14 $\frac{3}{4}$ "	24 $\frac{7}{16}$ "	32	35 $\frac{3}{4}$ "	39 $\frac{3}{4}$ "	65 $\frac{11}{16}$ "	52	58 $\frac{1}{4}$ "	64 $\frac{3}{4}$ "	106 $\frac{5}{16}$ "	72	80 $\frac{3}{4}$ "	89 $\frac{3}{4}$ "	148 $\frac{3}{16}$ "
13	14 $\frac{3}{8}$ "	16"	26 $\frac{1}{2}$ "	33	36 $\frac{7}{8}$ "	41"	67 $\frac{3}{4}$ "	53	59 $\frac{3}{8}$ "	66"	109"	73	81 $\frac{7}{8}$ "	91"	150 $\frac{1}{4}$ "
14	15 $\frac{1}{2}$ "	17 $\frac{1}{4}$ "	28 $\frac{9}{16}$ "	34	38"	42 $\frac{1}{4}$ "	69 $\frac{13}{16}$ "	54	60 $\frac{1}{2}$ "	67 $\frac{1}{4}$ "	111 $\frac{11}{16}$ "	74	83"	92 $\frac{1}{4}$ "	152 $\frac{5}{16}$ "
15	16 $\frac{5}{8}$ "	18 $\frac{1}{2}$ "	30 $\frac{5}{8}$ "	35	39 $\frac{1}{8}$ "	43 $\frac{1}{2}$ "	71 $\frac{7}{8}$ "	55	61 $\frac{5}{8}$ "	68 $\frac{1}{2}$ "	113 $\frac{1}{8}$ "	75	84 $\frac{1}{8}$ "	93 $\frac{1}{2}$ "	154 $\frac{3}{8}$ "
16	17 $\frac{3}{4}$ "	19 $\frac{3}{4}$ "	32 $\frac{5}{16}$ "	36	40 $\frac{1}{4}$ "	44 $\frac{3}{4}$ "	73 $\frac{5}{16}$ "	56	62 $\frac{3}{4}$ "	69 $\frac{3}{4}$ "	115 $\frac{3}{16}$ "	76	85 $\frac{1}{4}$ "	94 $\frac{3}{4}$ "	156 $\frac{7}{16}$ "
17	18 $\frac{7}{8}$ "	21"	34 $\frac{3}{4}$ "	37	41 $\frac{3}{8}$ "	46"	76"	57	63 $\frac{7}{8}$ "	71"	117 $\frac{1}{4}$ "	77	86 $\frac{3}{8}$ "	96"	158 $\frac{1}{2}$ "
18	20"	22 $\frac{1}{4}$ "	36 $\frac{13}{16}$ "	38	42 $\frac{1}{2}$ "	47 $\frac{1}{4}$ "	78 $\frac{1}{16}$ "	58	65"	72 $\frac{1}{4}$ "	119 $\frac{3}{16}$ "	78	87 $\frac{1}{2}$ "	97 $\frac{1}{4}$ "	160 $\frac{9}{16}$ "
19	21 $\frac{1}{8}$ "	23 $\frac{1}{2}$ "	38 $\frac{7}{8}$ "	39	43 $\frac{5}{8}$ "	48 $\frac{1}{2}$ "	80 $\frac{1}{8}$ "	59	66 $\frac{1}{8}$ "	73 $\frac{1}{2}$ "	121 $\frac{3}{8}$ "	79	88 $\frac{5}{8}$ "	98 $\frac{1}{2}$ "	162 $\frac{5}{8}$ "
20	22 $\frac{1}{4}$ "	24 $\frac{3}{4}$ "	40 $\frac{5}{16}$ "	40	44 $\frac{3}{4}$ "	49 $\frac{3}{4}$ "	82 $\frac{3}{16}$ "	60	67 $\frac{1}{4}$ "	74 $\frac{3}{4}$ "	123 $\frac{7}{16}$ "	80	89 $\frac{3}{4}$ "	99 $\frac{3}{4}$ "	164 $\frac{11}{16}$ "

TABLE CAN BE EXTENDED BY ADDING FOR EACH EXTRA HOLE AS FOLLOWS -
 FOR $\frac{1}{8}$ " PL. $\frac{1}{4}$ " BRIDGES ADD $\frac{1}{8}$ " FOR 1" PL. $\frac{1}{4}$ " BRIDGES ADD $\frac{1}{4}$ " FOR $\frac{3}{4}$ " PL. $\frac{5}{16}$ " BRIDGES ADD $2\frac{1}{4}$ "

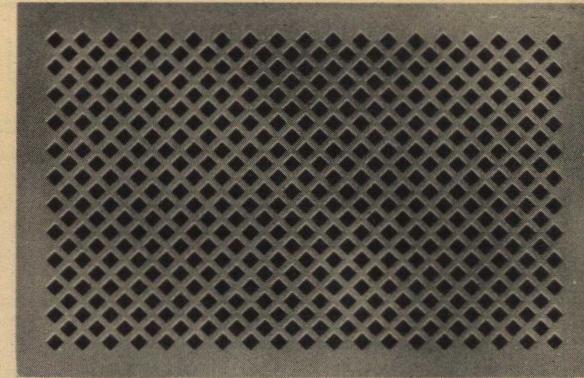
1/2" DIAGONAL LATTICE GRILLE

ACTUAL SIZE
1/2" HOLES, 3/16" BRIDGES, 53% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL,
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,

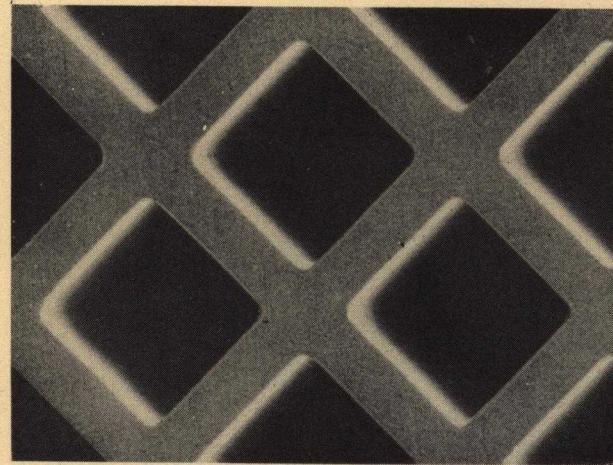


1/2" DIAGONAL LATTICE GRILLE
53% OPEN

TABLE OF OPENING SIZES

NO OF HOLES	OPENING SIZES	NO OF HOLES	OPENING SIZES	NO OF HOLES	OPENING SIZES	NO OF HOLES	OPENING SIZES		
1	1 1/16	23	11 1/16	45	22 1/16	67	33 1/16	89	44 1/16
3	1 1/16	25	12 1/16	47	23 1/16	69	34 1/16	91	45 1/16
5	2 1/16	27	13 1/16	49	24 1/16	71	35 1/16	93	46 1/16
7	3 1/16	29	14 1/16	51	25 1/16	73	36 1/16	95	47 1/16
9	4 1/16	31	15 1/16	53	26 1/16	75	37 1/16	97	48 1/16
11	5 1/16	33	16 1/16	55	27 1/16	77	38 1/16	99	49 1/16
13	6 1/16	35	17 1/16	57	28 1/16	79	39 1/16	101	50 1/16
15	7 1/16	37	18 1/16	59	29 1/16	81	40 1/16	103	51 1/16
17	8 1/16	39	19 1/16	61	30 1/16	83	41 1/16	105	52 1/16
19	9 1/16	41	20 1/16	63	31 1/16	85	42 1/16	107	53 1/16
21	10 1/16	43	21 1/16	65	32 1/16	87	43 1/16	109	54 1/16

7/8" DIAGONAL LATTICE GRILLE

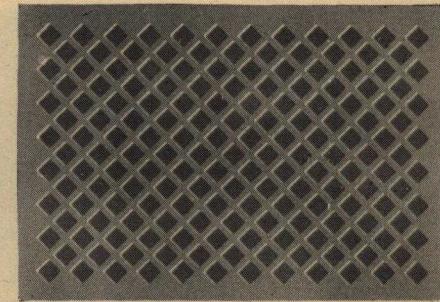


ACTUAL SIZE
7/8 HOLES, 1/4" BRIDGES
60% OPEN

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS.

KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,



WITHOUT PART HOLES



WITH PART HOLES
NOT FURNISHED UNLESS SPECIFIED

IMPORTANT: TABLE OF OPENING SIZES
BELOW APPLIES TO GRILLES WITHOUT
PART HOLES (SEE CUTS). FOR PART HOLES
ADD 1/2" TO DIMENSIONS GIVEN IN TABLE.

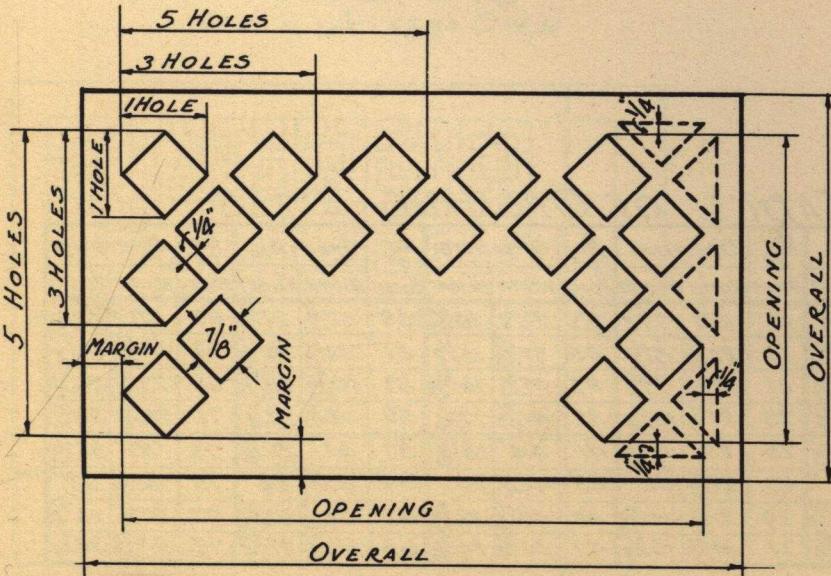
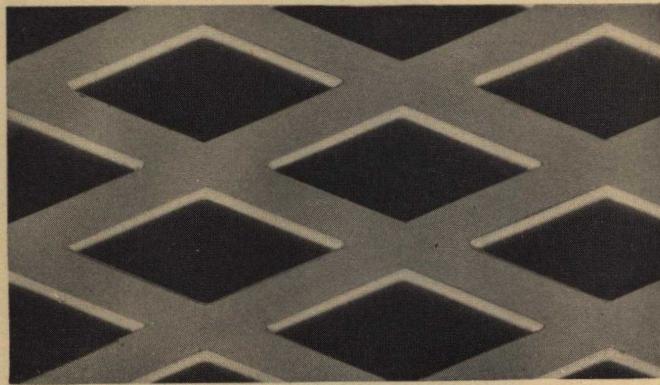


TABLE OF OPENING SIZES

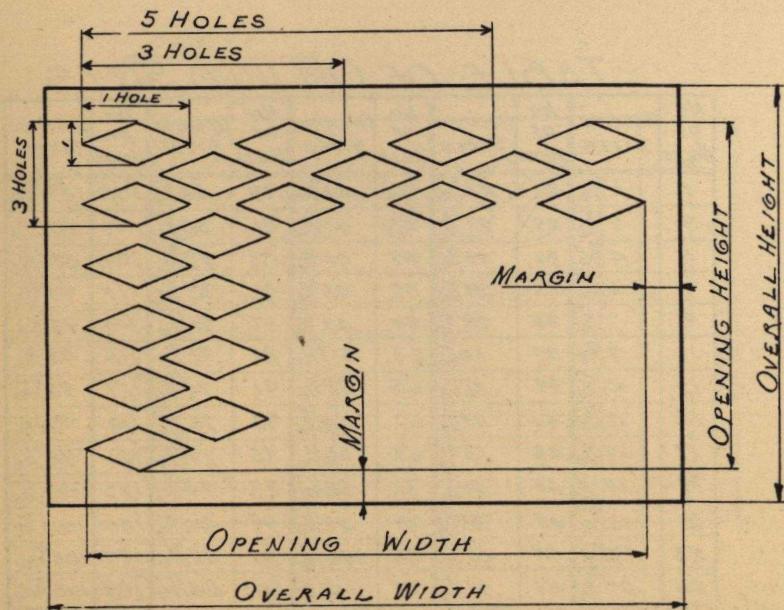
NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES
1	1 3/16	27	22 5/16	53	43 7/16	79	64 9/16	105	85 5/16
3	2 13/16	29	23 15/16	55	45 11/16	81	66 3/16	107	87 9/16
5	4 7/16	31	25 9/16	57	46 13/16	83	67 1/16	109	88 1/16
7	6 1/16	33	27 3/16	59	48 5/16	85	69 7/16	111	90 9/16
9	7 11/16	35	28 31/32	61	49 15/16	87	71 1/16	113	92 3/16
11	9 9/16	37	30 7/16	63	51 9/16	89	72 1/16	115	93 1/16
13	10 5/16	39	32 1/16	65	53 3/16	91	74 5/16	117	95 1/16
15	12 9/16	41	33 11/16	67	54 13/16	93	75 15/16	119	97 1/16
17	14 3/16	43	35 5/16	69	56 7/16	95	77 9/16	121	98 1/16
19	15 13/16	45	36 15/16	71	58 1/16	97	79 3/16	123	100 5/16
21	17 7/16	47	38 9/16	73	59 11/16	99	80 13/16	125	101 1/16
23	19 1/16	49	40 3/16	75	61 5/16	101	82 7/16	127	103 9/16
25	20 11/16	51	41 13/16	77	62 15/16	103	84 1/16	129	105 3/16

STYLE - E - GRILLE

DIAMOND



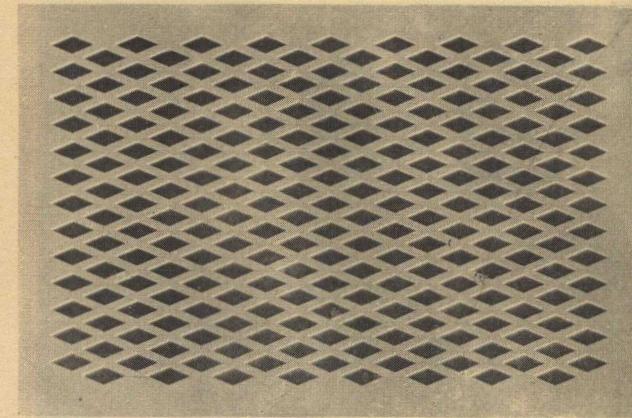
ACTUAL SIZE
STYLE - E - 52° OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.

KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.

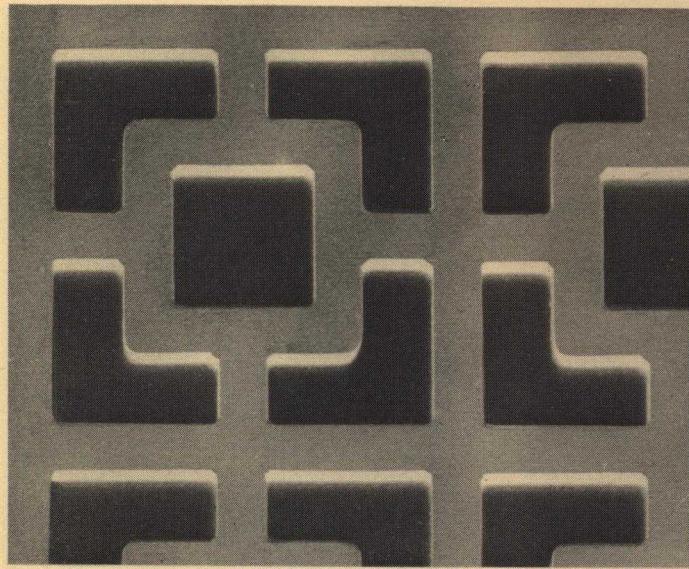


STYLE - E - 52° OPEN

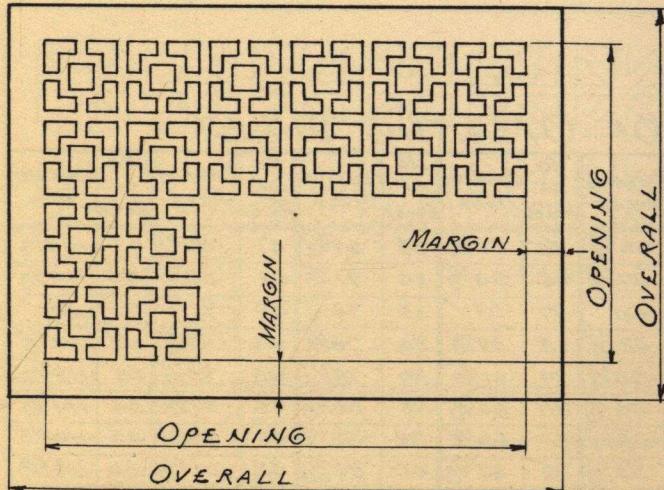
TABLE OF OPENING SIZES

No of Holes	OPENING		No of Holes	OPENING		No of Holes	OPENING		No of Holes	OPENING				
	WIDTH	HEIGHT		WIDTH	HEIGHT		WIDTH	HEIGHT		WIDTH	HEIGHT			
1	1 1/2"	5/8"	17	10 1/2"	7 5/8"	33	35 5/8"	14 5/8"	49	52 1/2"	21 5/8"	65	69 1/2"	28 5/8"
3	3 5/8"	1 1/2"	19	20 5/8"	8 1/2"	35	37 5/8"	15 1/2"	51	54 5/8"	22 1/2"	67	71 5/8"	24 1/2"
5	5 3/4"	2 3/8"	21	22 3/4"	9 3/8"	37	39 3/4"	16 3/8"	53	56 3/4"	23 3/8"	69	73 3/4"	30 3/8"
7	7 7/8"	3 1/4"	23	24 7/8"	10 1/4"	39	41 7/8"	17 1/4"	55	58 7/8"	24 1/4"	71	75 7/8"	31 1/4"
9	10"	4 1/8"	25	27"	11 1/8"	41	44"	18 1/8"	57	61"	25 1/8"	73	78"	32 1/8"
11	12 1/8"	5"	27	29 1/8"	12"	43	46 1/8"	19"	59	63 1/8"	26"	75	80 1/8"	33"
13	14 1/4"	5 1/8"	29	31 1/4"	12 7/8"	45	48 1/4"	19 7/8"	61	65 1/4"	26 7/8"	77	82 1/4"	33 7/8"
15	16 1/8"	6 3/4"	31	33 3/8"	13 3/4"	47	50 3/8"	20 3/4"	63	67 3/8"	27 3/4"	79	84 3/8"	34 3/4"

STYLE - A - GRILLE
SQUARE LINK

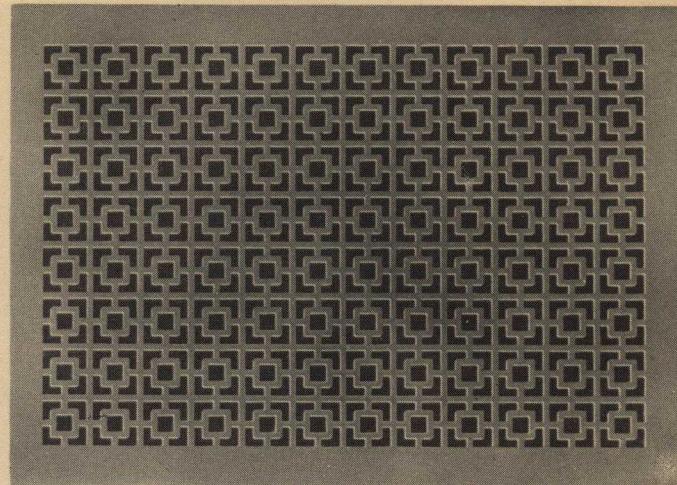


ACTUAL SIZE
STYLE - A - 52% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH.



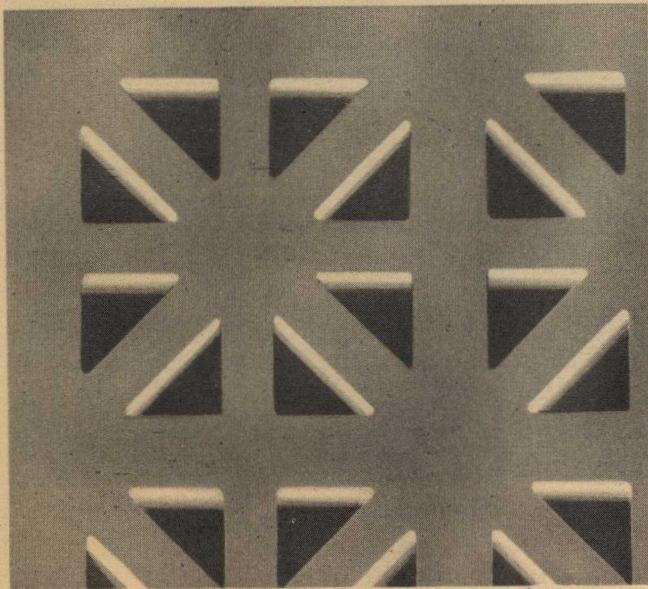
STYLE-A-GRILLE
52% OPEN

TABLE OF OPENING SIZES

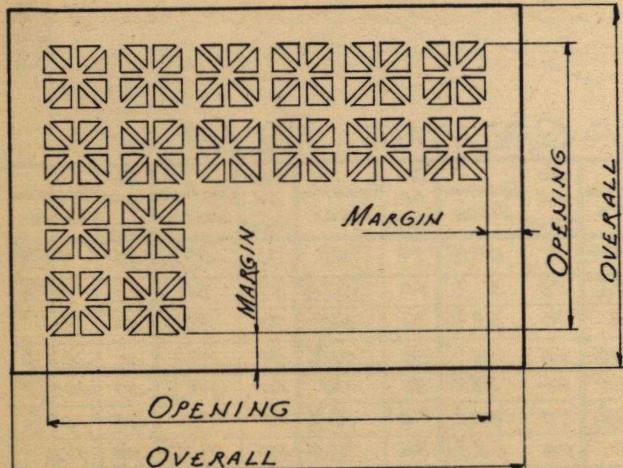
No of Holes	Opening Sizes	No of Holes	Opening Sizes	No of Holes	Opening Sizes	No of Holes	Opening Sizes	No of Holes	Opening Sizes	No of Holes	Opening Sizes	No of Holes	Opening Sizes
1	2 "	8	17 3/4	15	33 1/2	22	49 1/4	29	65 "	36	80 3/4	43	96 1/2
2	4 1/4	9	20 "	16	35 3/4	23	51 1/2	30	67 1/4	37	83 "	44	98 3/4
3	6 1/2	10	22 1/4"	17	38 "	24	53 3/4	31	69 1/2"	38	85 1/4	45	101 "
4	8 3/4	11	24 1/2"	18	40 1/4	25	56 "	32	71 3/4	39	87 1/2"	46	103 1/4
5	11 "	12	26 3/4"	19	42 1/2	26	58 1/4	33	74 "	40	89 3/4	47	105 1/2
6	13 1/4	13	29 "	20	44 3/4	27	60 1/2	34	76 1/4	41	92 "	48	107 3/4
7	15 1/2	14	31 1/4"	21	47 "	28	62 3/4	35	78 1/2	42	94 1/4	49	110 "

III

STYLE - L2 - GRILLE
UNION JACK DESIGN 1 $\frac{3}{4}$ " SIZE

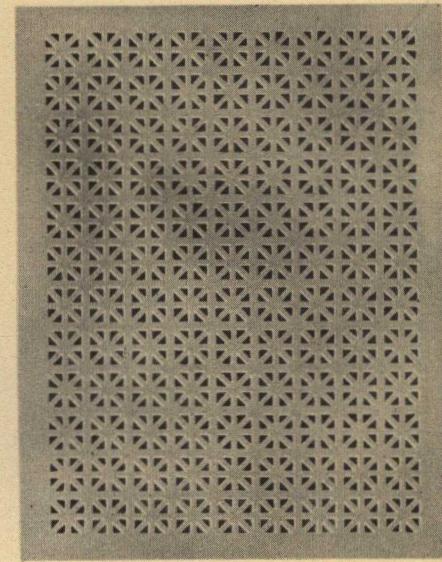


ACTUAL SIZE STYLE - L2
28% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL,
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH.

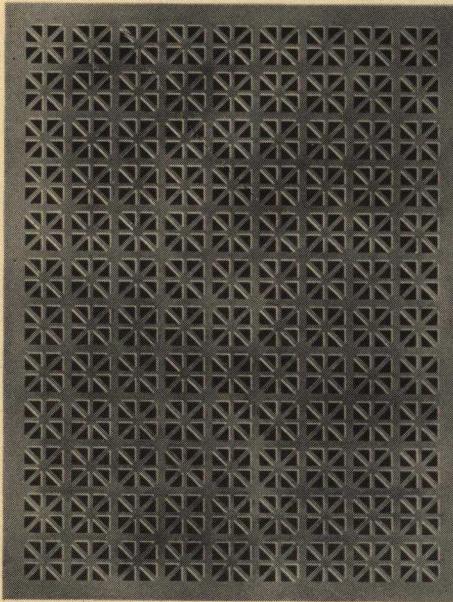


STYLE - L2-
28% OPEN

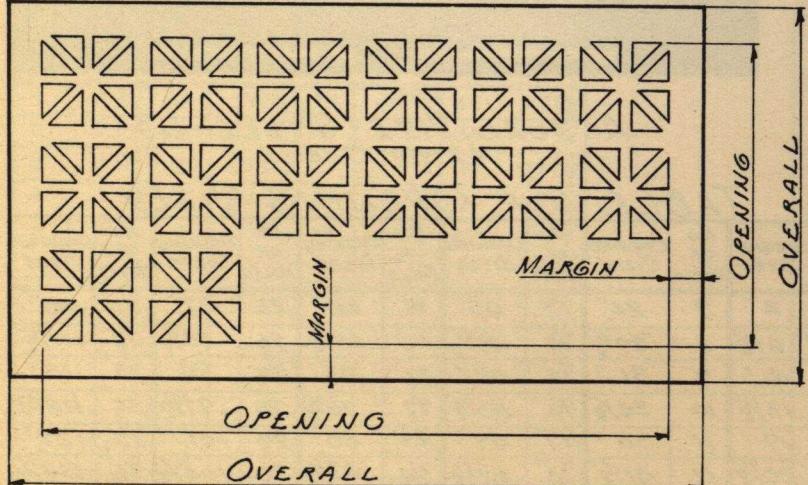
TABLE OF OPENING SIZES

No. OF Holes	No. Of OPENING SIZES	No. Of Holes	No. Of OPENING SIZES	No. Of Holes	No. Of OPENING SIZES	No. Of Holes	No. Of OPENING SIZES	No. Of Holes	No. Of OPENING SIZES
1	1 $\frac{3}{4}$ "	9	18 $\frac{3}{4}$ "	17	35 $\frac{3}{4}$ "	25	52 $\frac{3}{4}$ "	33	69 $\frac{3}{4}$ "
2	3 $\frac{7}{8}$ "	10	20 $\frac{7}{8}$ "	18	37 $\frac{7}{8}$ "	26	54 $\frac{7}{8}$ "	34	71 $\frac{7}{8}$ "
3	6 "	11	23 "	19	40 "	27	57 "	35	74 "
4	8 $\frac{1}{8}$ "	12	25 $\frac{1}{8}$ "	20	42 $\frac{1}{8}$ "	28	59 $\frac{1}{8}$ "	36	76 $\frac{1}{8}$ "
5	10 $\frac{1}{4}$ "	13	27 $\frac{1}{4}$ "	21	44 $\frac{1}{4}$ "	29	61 $\frac{1}{4}$ "	37	78 $\frac{1}{4}$ "
6	12 $\frac{3}{8}$ "	14	29 $\frac{3}{8}$ "	22	46 $\frac{3}{8}$ "	30	63 $\frac{3}{8}$ "	38	80 $\frac{3}{8}$ "
7	14 $\frac{1}{2}$ "	15	31 $\frac{1}{2}$ "	23	48 $\frac{1}{2}$ "	31	65 $\frac{1}{2}$ "	39	82 $\frac{1}{2}$ "
8	16 $\frac{5}{8}$ "	16	33 $\frac{5}{8}$ "	24	50 $\frac{5}{8}$ "	32	67 $\frac{5}{8}$ "	40	84 $\frac{5}{8}$ "
								48	101 $\frac{5}{8}$ "
								56	118 $\frac{5}{8}$ "

STYLED - L - GRILLE
UNION JACK DESIGN
2½" SIZE

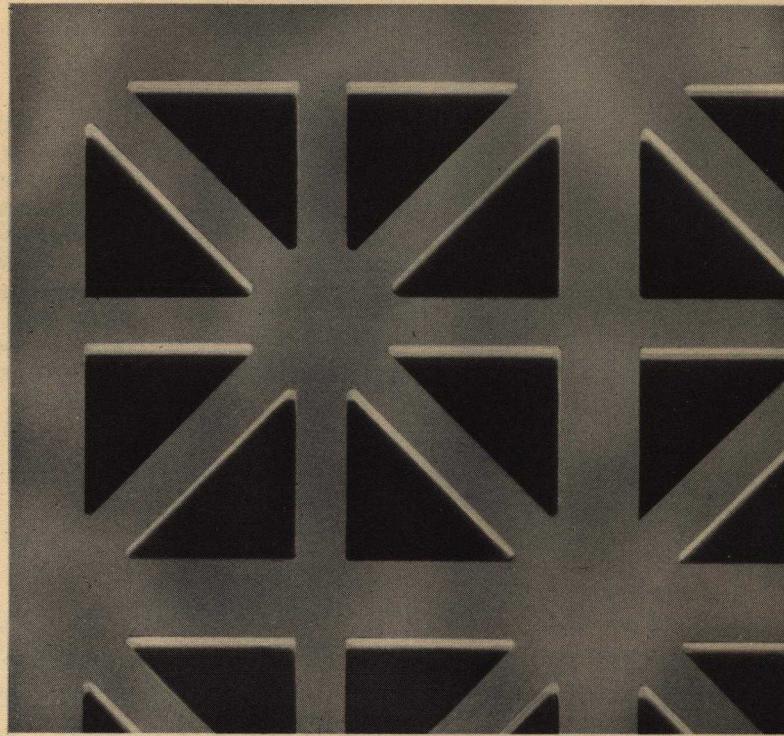


STYLE-L-
39% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH.



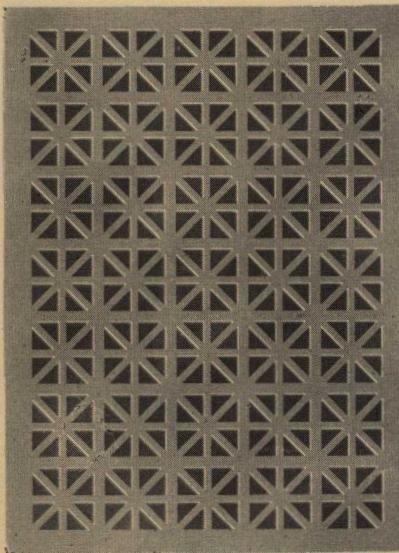
ACTUAL SIZE STYLE-L-
39% OPEN

TABLE OF OPENING SIZES

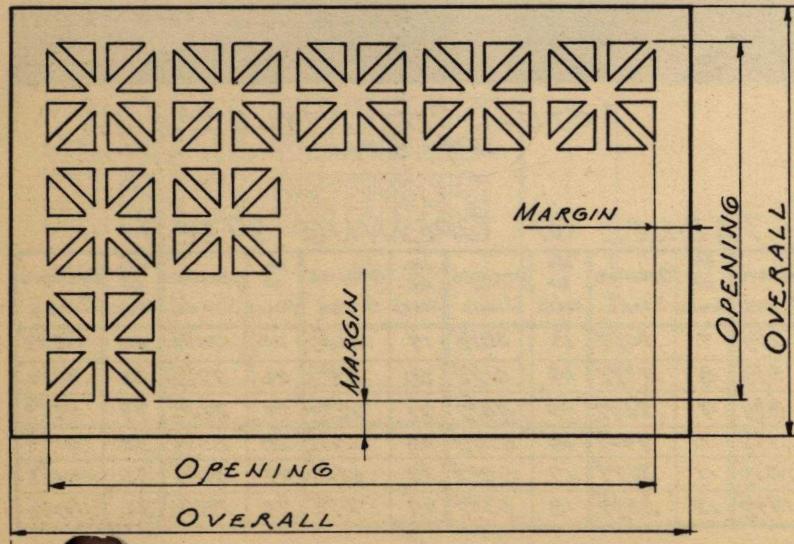
No. OF Holes	Opening Sizes	No. OF Holes	Opening Sizes	No. OF Holes	Opening Sizes	No. OF Holes	Opening Sizes	No. OF Holes	Opening Sizes		
1	2½"	7	20½"	13	38½"	19	56½"	25	74½"	31	92½"
2	5½"	8	23½"	14	41½"	20	59½"	26	77½"	32	95½"
3	8½"	9	26½"	15	44½"	21	62½"	27	80½"	33	98½"
4	11½"	10	29½"	16	47½"	22	65½"	28	83½"	34	101½"
5	14½"	11	32½"	17	50½"	23	68½"	29	86½"	35	104½"
6	17½"	12	35½"	18	53½"	24	71½"	30	89½"	36	107½"

III

STYLE - L3 - GRILLE
UNION JACK DESIGN - 3" SIZE

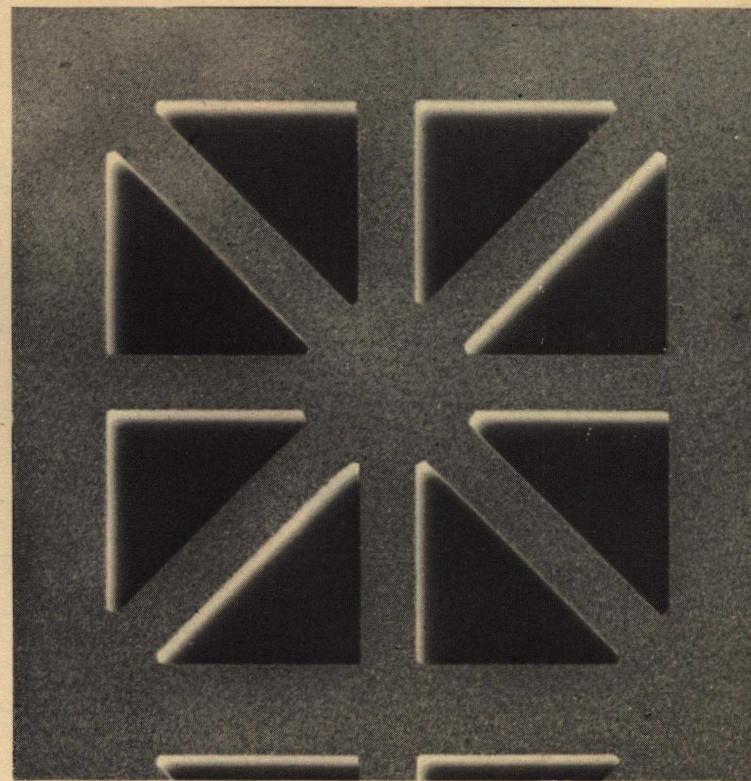


STYLE - L3
42% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,



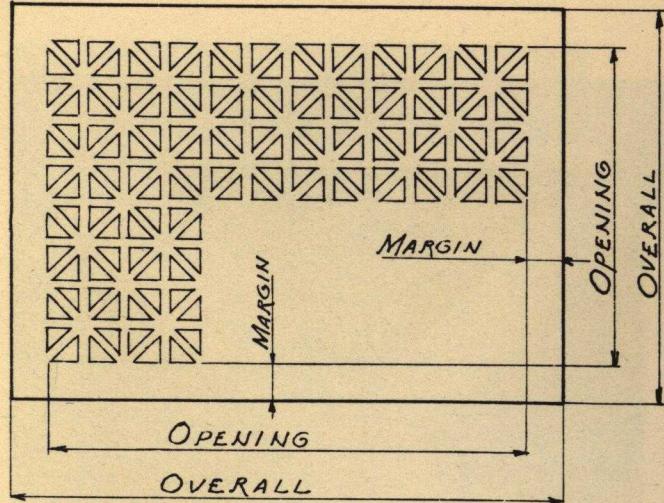
ACTUAL SIZE - STYLE - L3
42% OPEN

TABLE OF OPENING SIZES

NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES
1	3"	7	24"	13	45"	19	66"	25	87"
2	6 1/2"	8	27 1/2"	14	48 1/2"	20	69 1/2"	26	90 1/2"
3	10"	9	31"	15	52"	21	73"	27	94"
4	13 1/2"	10	34 1/2"	16	55 1/2"	22	76 1/2"	28	97 1/2"
5	17"	11	38"	17	59"	23	80"	29	101"
6	20 1/2"	12	41 1/2"	18	62 1/2"	24	83 1/2"	30	104 1/2"

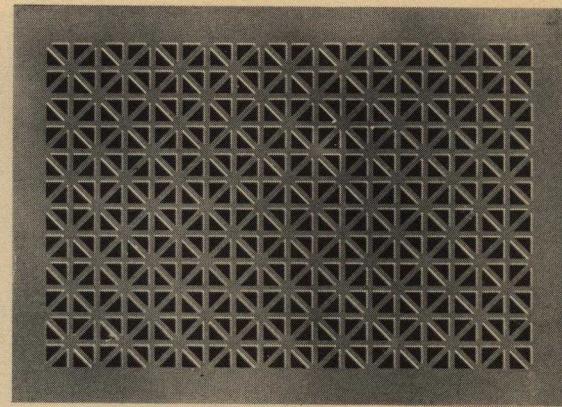
STYLE - LX - GRILLES

GRECIAN DESIGN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,



STYLE - LX - GRILLE

FOR LX2 32% OPEN
FOR ACTUAL SIZE OF UNIT SEE PAGE 28

No of Holes	OPENING SIZES						
1	1 3/4"	13	25 3/4"	25	49 3/4"	37	73 3/4"
2	3 3/4"	14	27 3/4"	26	51 3/4"	38	75 3/4"
3	5 3/4"	15	29 3/4"	27	53 3/4"	39	77 3/4"
4	7 3/4"	16	31 3/4"	28	55 3/4"	40	79 3/4"
5	9 3/4"	17	33 3/4"	29	57 3/4"	41	81 3/4"
6	11 3/4"	18	35 3/4"	30	59 3/4"	42	83 3/4"
7	13 3/4"	19	37 3/4"	31	61 3/4"	43	85 3/4"
8	15 3/4"	20	39 3/4"	32	63 3/4"	44	87 3/4"
9	17 3/4"	21	41 3/4"	33	65 3/4"	45	89 3/4"
10	19 3/4"	22	43 3/4"	34	67 3/4"	46	91 3/4"
11	21 3/4"	23	45 3/4"	35	69 3/4"	47	93 3/4"
12	23 3/4"	24	47 3/4"	36	71 3/4"	48	95 3/4"

TABLES OF OPENING SIZES

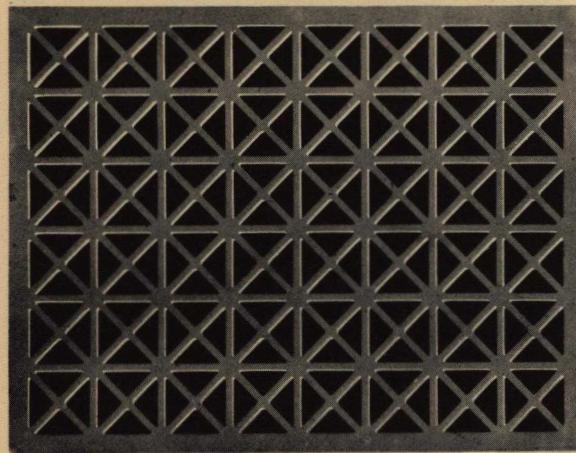
FOR LX - 46% OPEN
FOR ACTUAL SIZE OF UNIT SEE PAGE 29

No of Holes	OPENING SIZES	No of Holes	OPENING SIZES	No of Holes	OPENING SIZES
1	2 1/2"	13	35 1/2"	25	68 1/2"
2	5 1/4"	14	38 1/4"	26	71 1/4"
3	8 "	15	41 "	27	74 "
4	10 3/4"	16	43 3/4"	28	76 3/4"
5	13 1/2"	17	46 1/2"	29	79 1/2"
6	16 1/4"	18	49 1/4"	30	82 1/4"
7	19 "	19	52 "	31	85 "
8	21 3/4"	20	54 3/4"	32	87 3/4"
9	24 1/2"	21	57 1/2"	33	90 1/2"
10	27 1/4"	22	60 1/4"	34	93 1/4"
11	30 "	23	63 "	35	96 "
12	32 3/4"	24	65 3/4"	36	98 3/4"

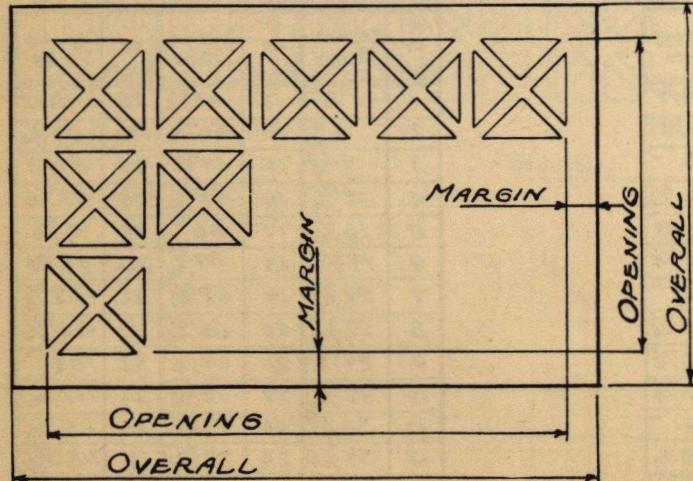
FOR LX3 - 46% OPEN
FOR ACTUAL SIZE OF UNIT SEE PAGE 30

No of Holes	OPENING SIZES	No of Holes	OPENING SIZES	No of Holes	OPENING SIZES
1	3"	13	42 3/4"	25	82 1/2"
2	6 5/16"	14	46 1/16"	26	85 3/16"
3	9 5/8"	15	49 3/8"	27	89 1/8"
4	12 15/16"	16	52 1/16"	28	92 7/16"
5	16 1/4"	17	56 "	29	95 3/4"
6	19 9/16"	18	59 5/16"	30	99 11/16"
7	22 7/8"	19	62 5/8"	31	102 3/8"
8	26 3/16"	20	65 15/16"	32	105 11/16"
9	29 1/2"	21	69 1/4"	33	109 "
10	32 13/16"	22	72 9/16"	34	112 5/16"
11	36 1/8"	23	75 7/8"	35	115 5/8"
12	39 7/16"	24	79 3/16"	36	118 15/16"

STYLE-Z-GRILLE



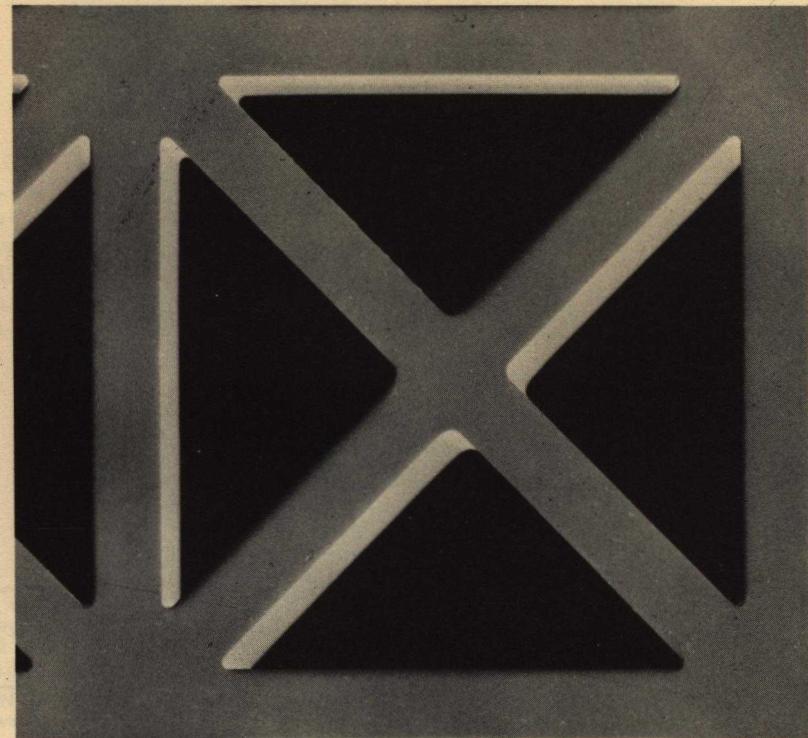
STYLE-Z



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.

KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,

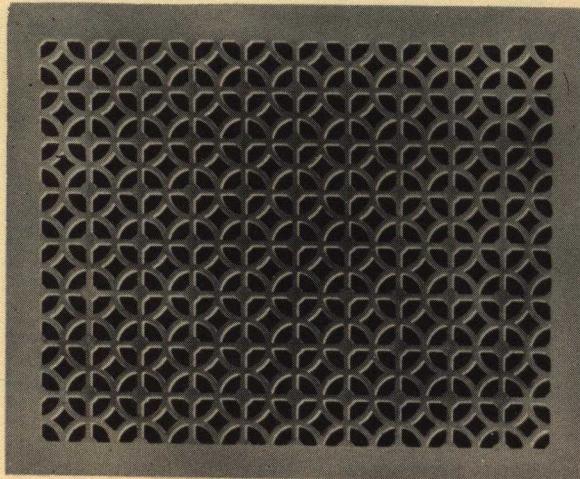


ACTUAL SIZE - 70% OPEN

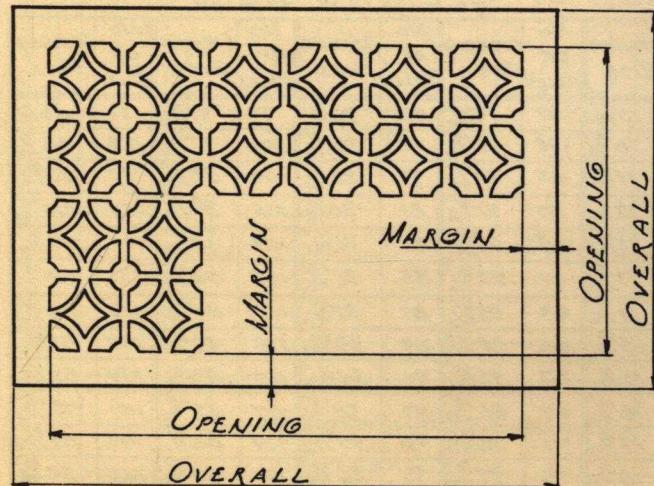
TABLE OF OPENING SIZES

NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES	NO. OF HOLES	OPENING SIZES
1	3 1/8"	7	24 1/8"	13	45 5/8"	19	66 1/8"	25	87 1/8"	31	108 1/8"
2	6 5/8"	8	27 5/8"	14	48 5/8"	20	69 5/8"	26	90 5/8"	32	111 5/8"
3	10 1/8"	9	31 1/8"	15	52 1/8"	21	73 1/8"	27	94 1/8"	33	115 1/8"
4	13 5/8"	10	34 5/8"	16	55 5/8"	22	76 5/8"	28	97 5/8"	34	118 5/8"
5	17 1/8"	11	38 1/8"	17	59 1/8"	23	80 1/8"	29	101 1/8"	35	122 1/8"
6	20 5/8"	12	41 5/8"	18	62 5/8"	24	83 5/8"	30	104 5/8"	36	125 5/8"

STYLE -M- GRILL 59^{b0}
WHEEL DESIGN

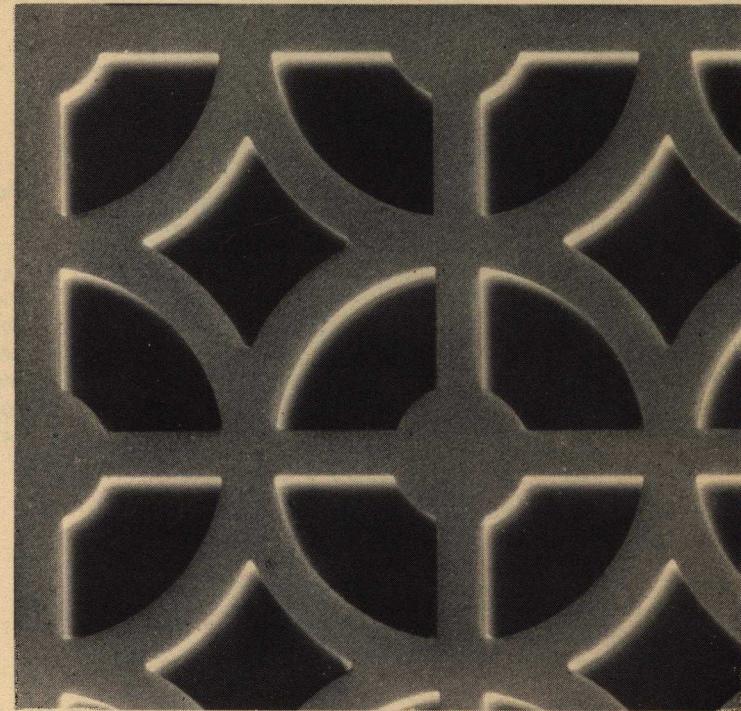


STYLE -M- 50% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH.



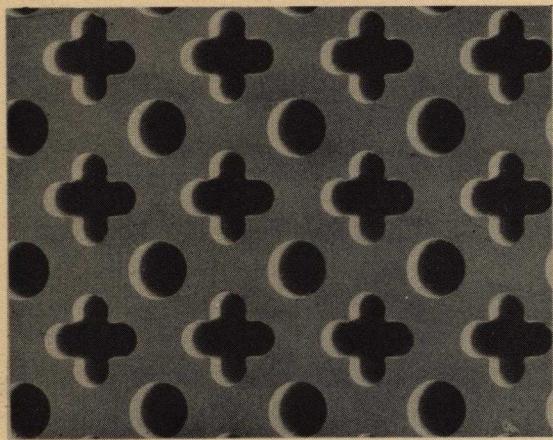
ACTUAL SIZE, STYLE -M- 50% OPEN

TABLE OF OPENING SIZES

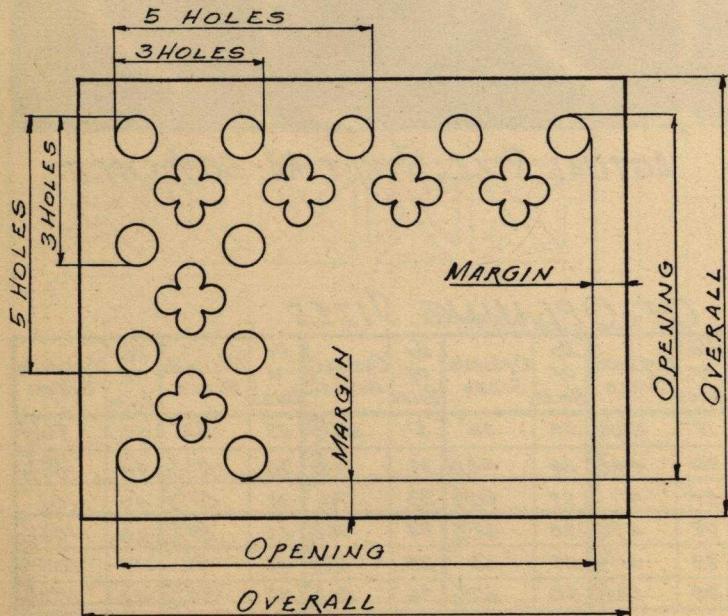
No of Holes	OPENING SIZES														
1	2"	7	15 1/2"	13	29"	19	42 1/2"	25	56"	31	69 1/2"	37	83"	43	96 1/2"
2	4 1/4"	8	17 3/4"	14	31 1/4"	20	44 3/4"	26	58 1/4"	32	71 3/4"	38	85 1/4"	44	98 3/4"
3	6 1/2"	9	20"	15	33 1/2"	21	47"	27	60 1/2"	33	74"	39	87 1/2"	45	101"
4	8 3/4"	10	22 1/4"	16	35 3/4"	22	49 1/4"	28	62 3/4"	34	76 1/4"	40	89 3/4"	46	103 1/4"
5	11"	11	24 1/2"	17	38"	23	51 1/2"	29	65"	35	78 1/2"	41	92"	47	105 1/2"
6	13 1/4"	12	26 3/4"	18	40 1/4"	24	53 3/4"	30	67 1/4"	36	80 3/4"	42	94 1/4"	48	107 3/4"

STYLE - I GRILLE

CLOVERLEAF & ROUND



ACTUAL SIZE, STYLE-I-
40% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH.



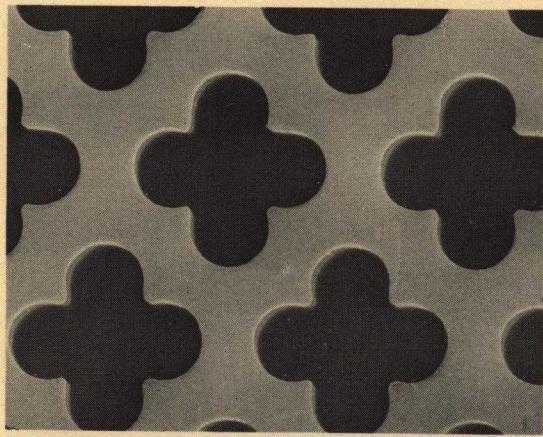
STYLE - I - 40% OPEN

TABLE OF OPENING SIZES

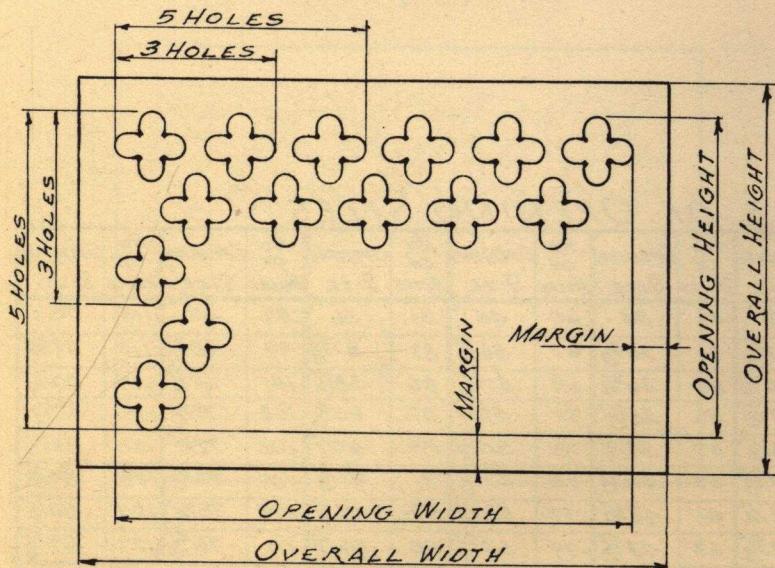
NO. OF HOLES	OPENING SIZE								
3	1 1/16"	27	10 1/16"	51	19 1/16"	75	28 1/16"	99	37 1/16"
5	1 13/16"	29	10 9/16"	53	19 9/16"	77	28 9/16"	101	37 9/16"
7	2 9/16"	31	11 1/16"	55	20 9/16"	79	29 9/16"	103	38 9/16"
9	3 5/16"	33	12 5/16"	57	21 5/16"	81	30 5/16"	105	39 5/16"
11	4 1/16"	35	13 1/16"	59	22 1/16"	83	31 1/16"	107	40 1/16"
13	4 13/16"	37	13 13/16"	61	22 13/16"	85	31 13/16"	109	40 13/16"
15	5 9/16"	39	14 9/16"	63	23 9/16"	87	32 9/16"	111	41 9/16"
17	6 5/16"	41	15 5/16"	65	24 5/16"	89	33 5/16"	113	42 5/16"
19	7 1/16"	43	16 1/16"	67	25 1/16"	91	34 1/16"	115	43 1/16"
21	7 13/16"	45	16 13/16"	69	25 13/16"	93	34 13/16"	117	43 13/16"
23	8 9/16"	47	17 9/16"	71	26 9/16"	95	35 9/16"	119	44 9/16"
25	9 5/16"	49	18 5/16"	73	27 5/16"	97	36 5/16"	121	45 5/16"

STYLE-F- GRILLE

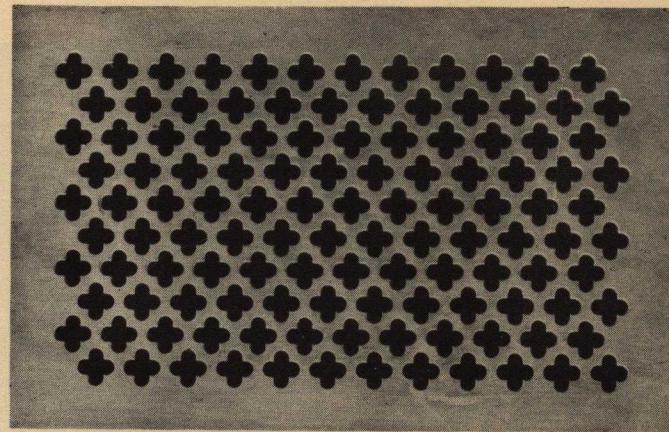
CLOVER LEAF



ACTUAL STYLE -F-
45% OPEN



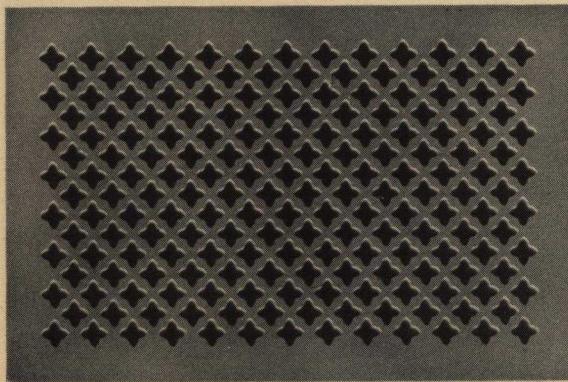
NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS
WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



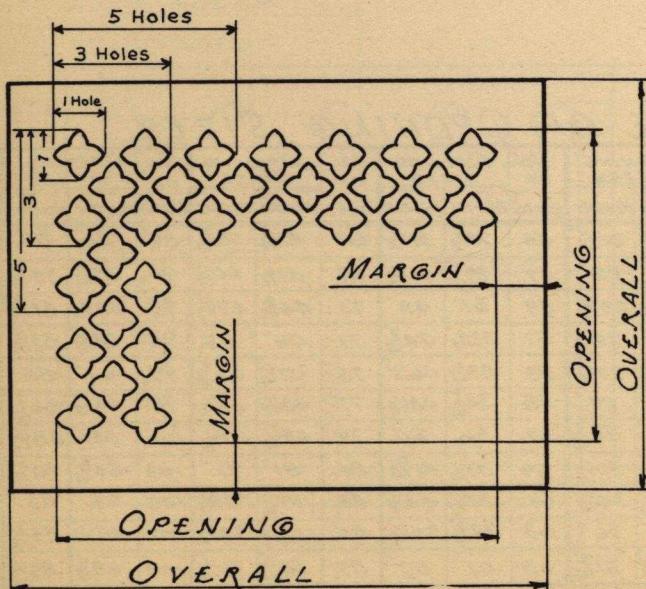
STYLE -F- 45% OPEN

TABLE OF OPENING SIZES

No OF HOLES	OPENING SIZES										
	WIDTH	HEIGHT									
1	1"	1"	23	14 $\frac{3}{4}$	20 $\frac{1}{4}$	45	28 $\frac{1}{2}$	39 $\frac{1}{2}$	67	42 $\frac{1}{4}$	58 $\frac{3}{4}$
3	2 $\frac{1}{4}$	2 $\frac{3}{4}$	25	16"	22"	47	29 $\frac{3}{4}$	41 $\frac{1}{4}$	69	43 $\frac{1}{2}$	60 $\frac{1}{2}$
5	3 $\frac{1}{2}$	4 $\frac{1}{2}$	27	17 $\frac{1}{4}$	23 $\frac{3}{4}$	49	31"	43"	71	44 $\frac{3}{4}$	62 $\frac{1}{4}$
7	4 $\frac{3}{4}$	6 $\frac{1}{4}$	29	18 $\frac{1}{2}$	25 $\frac{1}{2}$	51	32 $\frac{1}{4}$	44 $\frac{3}{4}$	73	46"	64"
9	6"	8"	31	19 $\frac{3}{4}$	27 $\frac{1}{4}$	53	33 $\frac{1}{2}$	46 $\frac{1}{2}$	75	47 $\frac{1}{4}$	65 $\frac{3}{4}$
11	7 $\frac{1}{4}$	9 $\frac{3}{4}$	33	21"	29"	55	34 $\frac{3}{4}$	48 $\frac{1}{4}$	77	48 $\frac{1}{2}$	67 $\frac{1}{2}$
13	8 $\frac{1}{2}$	11 $\frac{1}{2}$	35	22 $\frac{1}{4}$	30 $\frac{3}{4}$	57	36"	50"	79	49 $\frac{3}{4}$	69 $\frac{1}{4}$
15	9 $\frac{3}{4}$	13 $\frac{1}{2}$	37	23 $\frac{1}{2}$	32 $\frac{1}{2}$	59	37 $\frac{1}{4}$	51 $\frac{3}{4}$	81	51"	71"
17	11"	15"	39	24 $\frac{3}{4}$	34 $\frac{1}{4}$	61	38 $\frac{1}{2}$	53 $\frac{1}{2}$	83	52 $\frac{1}{4}$	72 $\frac{3}{4}$
19	12 $\frac{1}{4}$	16 $\frac{3}{4}$	41	26"	36"	63	39 $\frac{3}{4}$	55 $\frac{1}{4}$	85	53 $\frac{1}{2}$	74 $\frac{1}{2}$
21	13 $\frac{1}{2}$	18 $\frac{1}{2}$	43	27 $\frac{1}{4}$	37 $\frac{3}{4}$	65	41"	57"	87	54 $\frac{3}{4}$	76 $\frac{1}{4}$
										109	68 $\frac{1}{2}$
											95 $\frac{1}{2}$



STYLE - V- GRILLE
54% OPEN



STYLE - V- GRILLE

GOTHIC DESIGN (SMALL)

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT
WIDTH AND HEIGHT.



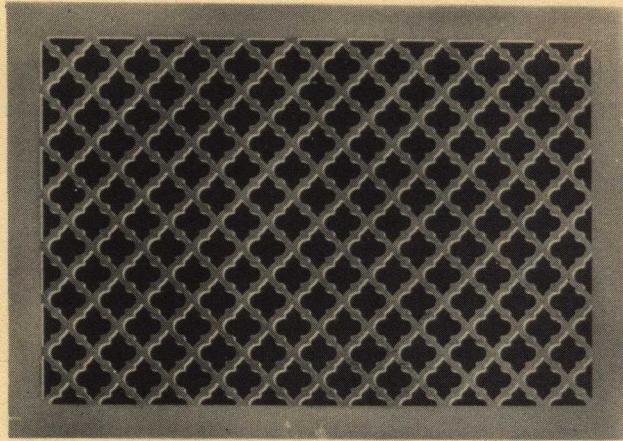
ACTUAL SIZE - STYLE - V.
54% OPEN

TABLE OF OPENING SIZES

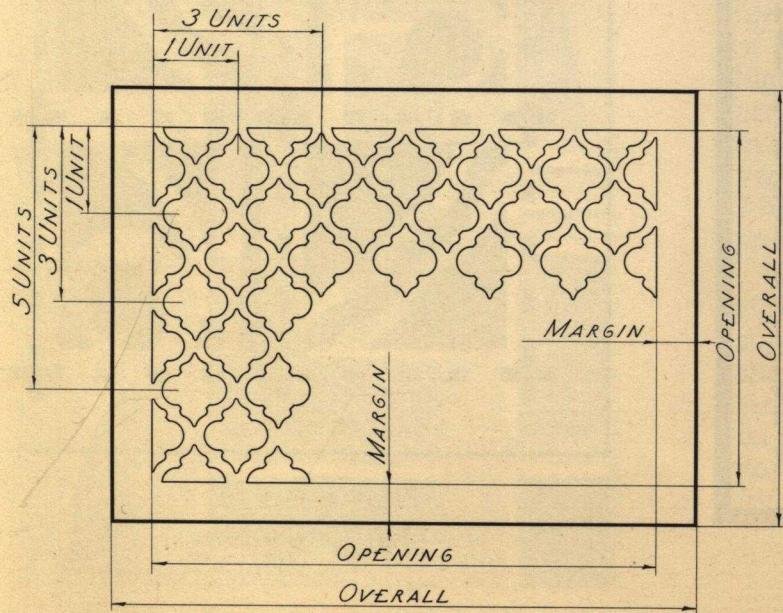
NO. OF HOLES	OPENING SIZE														
1	1 "	17	12 "	33	23 "	49	34 "	65	45 "	81	56 "	97	67 "	113	78 "
3	2 3/8"	19	13 3/8"	35	24 3/8"	51	35 3/8"	67	46 3/8"	83	57 3/8"	99	68 3/8"	115	79 3/8"
5	3 3/4"	21	14 3/4"	37	25 3/4"	53	36 3/4"	69	47 3/4"	85	58 3/4"	101	69 3/4"	117	80 3/4"
7	5 1/8"	23	16 1/8"	39	27 1/8"	55	38 1/8"	71	49 1/8"	87	60 1/8"	103	71 1/8"	119	82 1/8"
9	6 1/2"	25	17 1/2"	41	28 1/2"	57	39 1/2"	73	50 1/2"	89	61 1/2"	105	72 1/2"	121	83 1/2"
11	7 1/8"	27	18 1/8"	43	29 1/8"	59	40 1/8"	75	51 1/8"	91	62 1/8"	107	73 1/8"	123	84 1/8"
13	9 1/4"	29	20 1/4"	45	31 1/4"	61	42 1/4"	77	53 1/4"	93	64 1/4"	109	75 1/4"	125	86 1/4"
15	10 5/8"	31	21 5/8"	47	32 5/8"	63	43 5/8"	79	54 5/8"	95	65 5/8"	111	76 5/8"	127	87 5/8"

STYLE - C - GRILLE

GOTHIC DESIGN (LARGE)



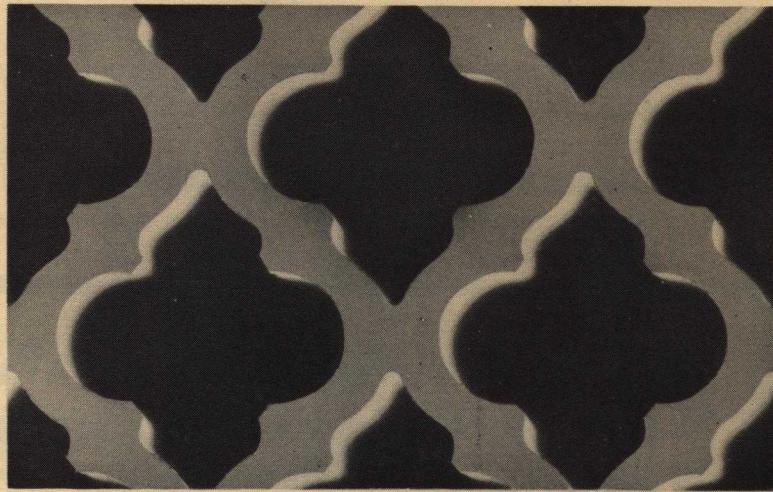
STYLE - C -



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.

KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



ACTUAL SIZE - 72% OPEN

TABLE OF OPENING SIZES

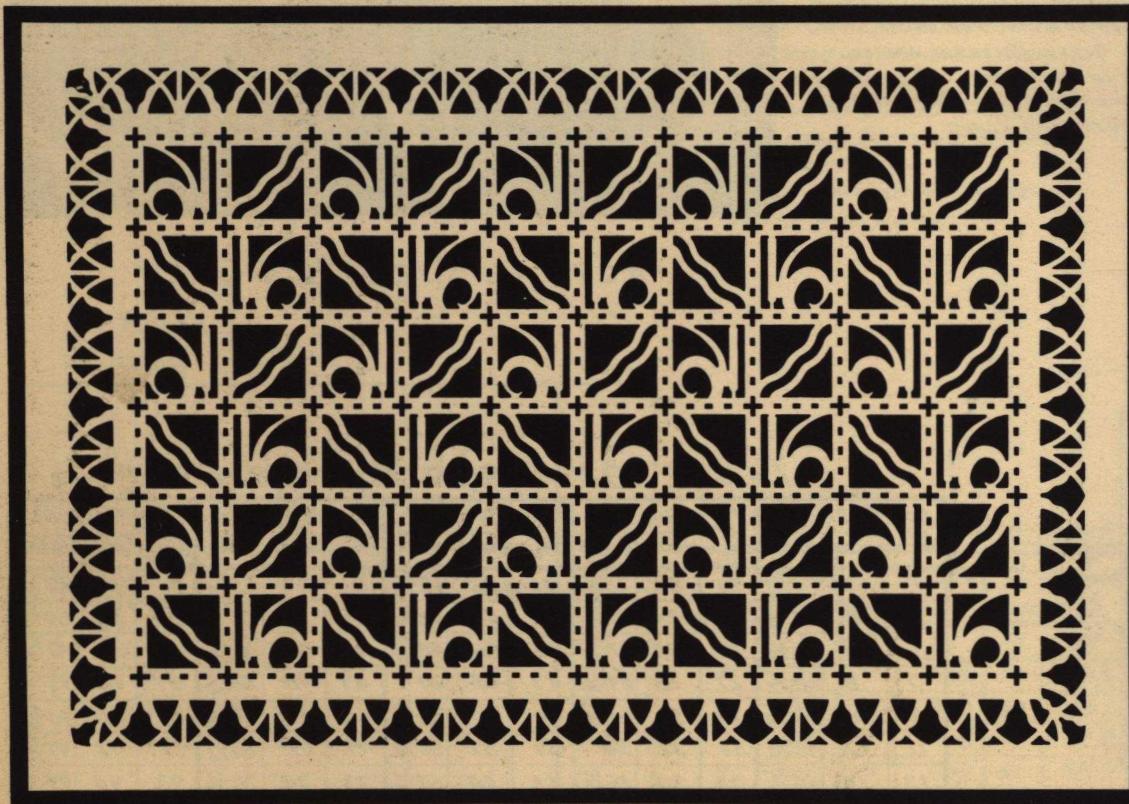
No. OF UNITS	OPENING										
	WIDTH	HEIGHT									
1	2"	2 1/8"	21	22"	23 3/8"	41	42"	44 5/8"	61	62"	65 7/8"
3	4"	4 1/4"	23	24"	25 1/2"	43	44"	46 3/4"	63	64"	68"
5	6"	6 3/8"	25	26"	27 5/8"	45	46"	48 7/8"	65	66"	70 1/8"
7	8"	8 1/2"	27	28"	29 3/4"	47	48"	51"	67	68"	72 1/4"
9	10"	10 5/8"	29	30"	31 1/8"	49	50"	53 1/8"	69	70"	74 3/8"
11	12"	12 3/4"	31	32"	34"	51	52"	55 1/4"	71	72"	76 1/2"
13	14"	14 1/8"	33	34"	36 1/8"	53	54"	57 3/8"	73	74"	78 5/8"
15	16"	17"	35	36"	38 1/4"	55	56"	59 1/2"	75	76"	80 3/4"
17	18"	19 1/8"	37	38"	40 3/8"	57	58"	61 5/8"	77	78"	82 7/8"
19	20"	21 1/4"	39	40"	42 1/2"	59	60"	63 3/4"	79	80"	85"
									99	100"	106 1/4"

Style - HK 745 - Grille

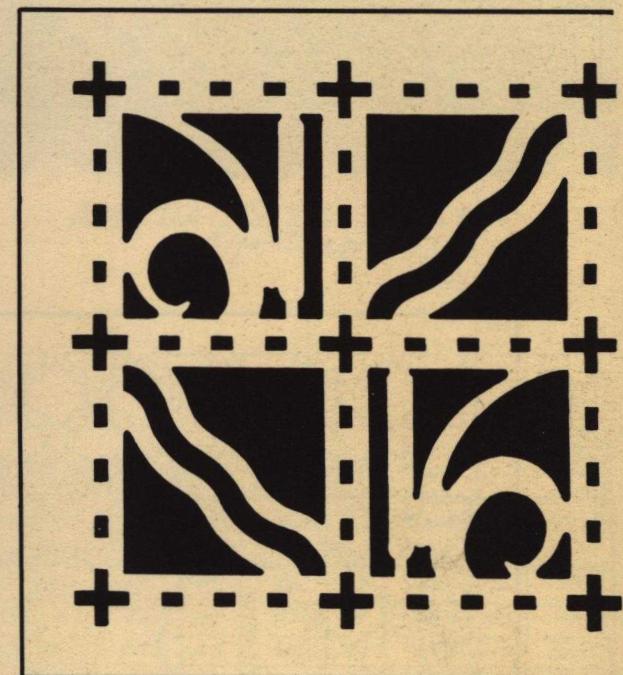
Design Patent Applied For

This design was a prize winner in our recent Grille Design Contest and was selected by the architectural firm of Guilbert & Betelle for bronze and aluminum grilles prominently located in the new Weequahic High School building in Newark, N. J. The grille is made by punching the design in a metal plate, and it

represents the highest achievement in the art of perforating. When it is desired to use this design it would be advisable to communicate with us so that the openings over which the grille is placed may be of the proper dimensions to obtain the best effect.



Style HK-745 Grille—50% Open

Style HK-745
Half Actual Size

Actual Size of Style HK-790



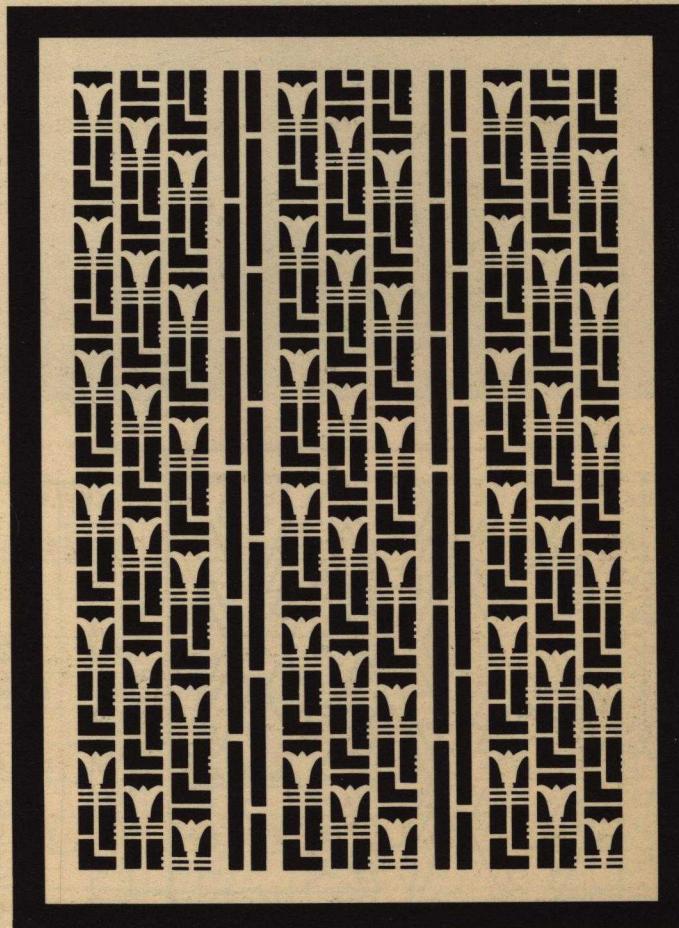
Style - HK 790 - Grille

Design Patent Applied For

This design produced in red bronze or in one of the white metals creates a most striking effect. Its production is possible only because of the extraordinary development in dies and perforating equipment which we have made as the result of long experience and close study of the problems of perforating.

The design units of Style HK 790 may be furnished in a variety of arrangements. In a high narrow grille the arrangement of units in straight rows transversely is suggested. The slots may be omitted if desired.

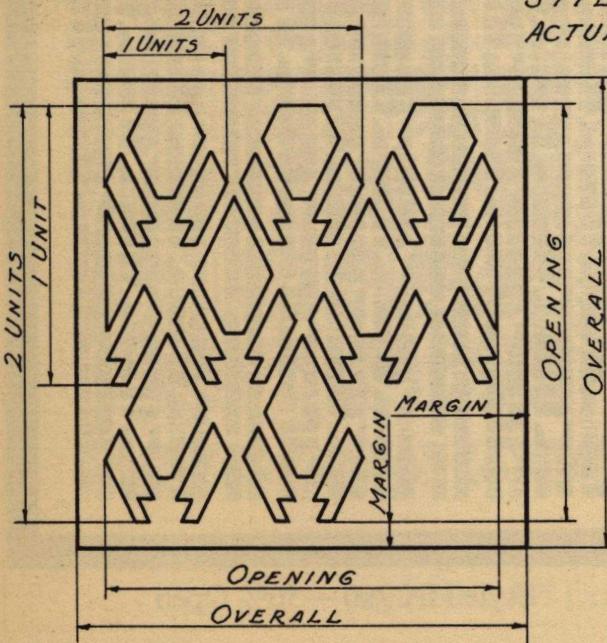
Whenever this design is to be used we suggest that a list of the proposed opening sizes be checked with us so that we can prepare working drawings for your approval.



Style HK 790—56% Open

STYLE-HK 725-GRILLE

DESIGN PATENT APPLIED FOR

STYLE-HK 725 50% OPEN
ACTUAL SIZE SHOWN AT RIGHT

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.

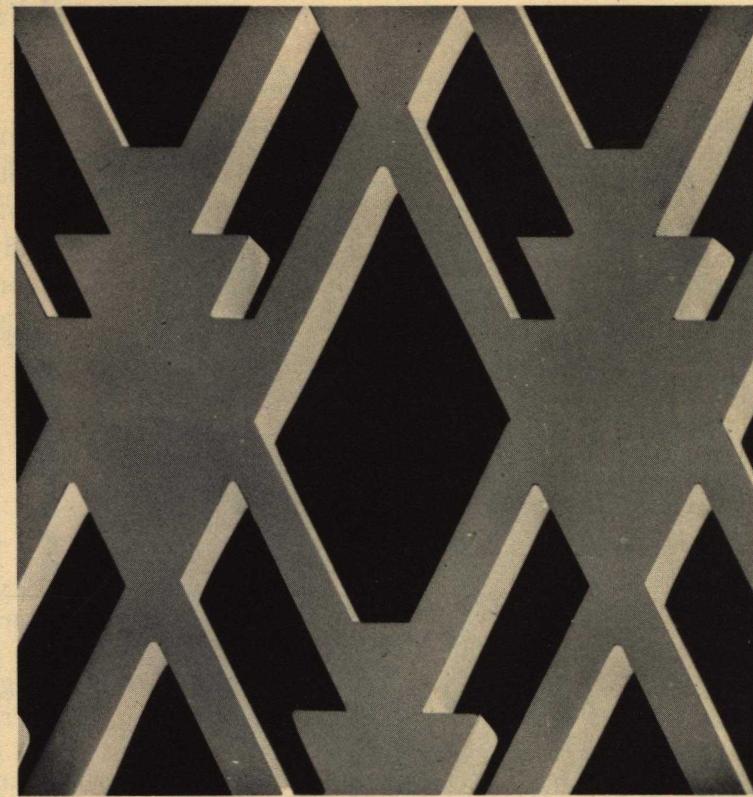
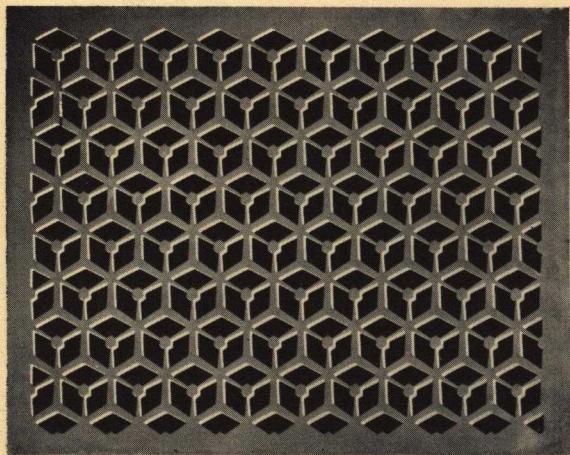


TABLE OF OPENING SIZES

NO. OF UNITS	OPENING		NO. OF UNITS	OPENING		NO. OF UNITS	OPENING		NO. OF UNITS	OPENING		NO. OF UNITS	OPENING	
	WIDTH	HEIGHT		WIDTH	HEIGHT		WIDTH	HEIGHT		WIDTH	HEIGHT		WIDTH	HEIGHT
1	2 $\frac{3}{16}$ "	5"	9	22 $\frac{3}{16}$ "	25"	17	42 $\frac{3}{16}$ "	45"	25	62 $\frac{3}{16}$ "	65"	33	82 $\frac{3}{16}$ "	85"
2	4 $\frac{1}{16}$ "	7 $\frac{1}{2}$ "	10	24 $\frac{1}{16}$ "	27 $\frac{1}{2}$ "	18	44 $\frac{1}{16}$ "	47 $\frac{1}{2}$ "	26	64 $\frac{1}{16}$ "	67 $\frac{1}{2}$ "	34	84 $\frac{1}{16}$ "	87 $\frac{1}{2}$ "
3	7 $\frac{3}{16}$ "	10"	11	27 $\frac{3}{16}$ "	30"	19	47 $\frac{3}{16}$ "	50"	27	67 $\frac{3}{16}$ "	70"	35	87 $\frac{3}{16}$ "	90"
4	9 $\frac{11}{16}$ "	12 $\frac{1}{2}$ "	12	29 $\frac{1}{16}$ "	32 $\frac{1}{2}$ "	20	49 $\frac{1}{16}$ "	52 $\frac{1}{2}$ "	28	69 $\frac{11}{16}$ "	72 $\frac{1}{2}$ "	36	89 $\frac{11}{16}$ "	92 $\frac{1}{2}$ "
5	12 $\frac{3}{16}$ "	15"	13	32 $\frac{3}{16}$ "	35"	21	52 $\frac{3}{16}$ "	55"	29	72 $\frac{3}{16}$ "	75"	37	92 $\frac{3}{16}$ "	95"
6	14 $\frac{1}{16}$ "	17 $\frac{1}{2}$ "	14	34 $\frac{1}{16}$ "	37 $\frac{1}{2}$ "	22	54 $\frac{1}{16}$ "	57 $\frac{1}{2}$ "	30	74 $\frac{11}{16}$ "	77 $\frac{1}{2}$ "	38	94 $\frac{11}{16}$ "	97 $\frac{1}{2}$ "
7	17 $\frac{3}{16}$ "	20"	15	37 $\frac{3}{16}$ "	40"	23	57 $\frac{3}{16}$ "	60"	31	77 $\frac{3}{16}$ "	80"	39	97 $\frac{3}{16}$ "	100"
8	19 $\frac{1}{16}$ "	22 $\frac{1}{2}$ "	16	39 $\frac{1}{16}$ "	42 $\frac{1}{2}$ "	24	59 $\frac{1}{16}$ "	62 $\frac{1}{2}$ "	32	79 $\frac{11}{16}$ "	82 $\frac{1}{2}$ "	40	99 $\frac{11}{16}$ "	102 $\frac{1}{2}$ "

STYLE - HK 750 - GRILLE

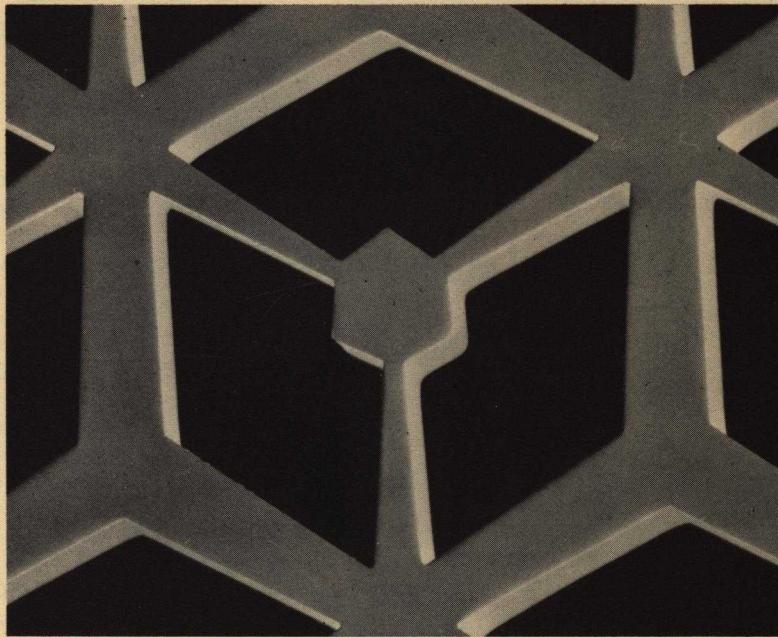


STYLE HK 750

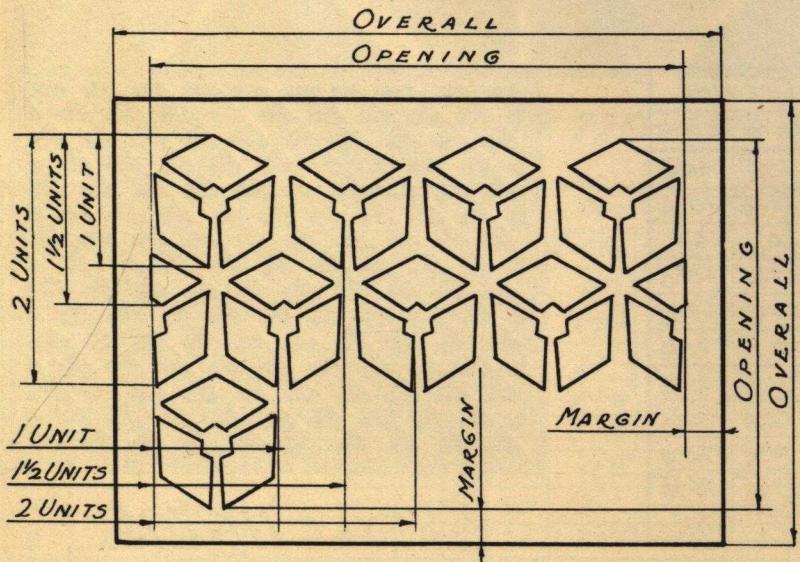
DESIGN PATENT
APPLIED FOR

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

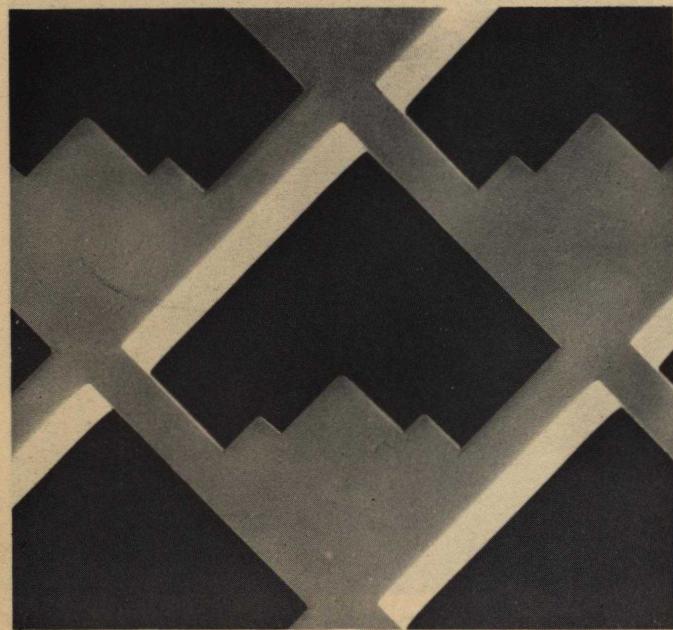
WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



ACTUAL SIZE - STYLE HK 750 - 60% OPEN



NO OF UNITS	OPENING										
	WIDTH	HEIGHT									
1	2 3/4"	2 3/4"	7	20	17 3/4"	13	37 1/4"	32 3/4"	19	54 1/2"	47 3/4"
1 1/2	4 3/8"	3 5/8"	7 1/2	21 7/16"	18 5/8"	13 1/2	38 11/16"	39 5/8"	19 1/2	55 15/16"	48 5/8"
2	5 5/8"	5 1/4"	8	22 7/8"	20 1/4"	14	40 1/8"	35 1/4"	20	57 3/8"	50 1/4"
2 1/2	7 1/4"	6 1/8"	8 1/2	24 5/16"	21 1/8"	14 1/2	41 9/16"	36 1/8"	20 1/2	58 13/16"	51 1/8"
3	8 1/2"	7 3/4"	9	25 3/4"	22 3/4"	15	43 "	37 3/4"	21	60 1/4"	52 3/4"
3 1/2	9 5/16"	8 5/8"	9 1/2	27 3/16"	23 5/8"	15 1/2	44 7/16"	38 5/8"	21 1/2	61 1/16"	53 5/8"
4	11 3/8"	10 1/4"	10	28 7/8"	25 1/4"	16	45 7/16"	40 1/4"	22	63 1/8"	55 1/4"
4 1/2	12 13/16"	11 1/8"	10 1/2	30 1/16"	26 1/8"	16 1/2	47 5/16"	41 1/8"	22 1/2	64 9/16"	56 1/8"
5	14 1/4"	12 3/4"	11	31 1/2"	27 3/4"	17	48 3/4"	42 3/4"	23	66"	57 3/4"
5 1/2	15 1/16"	13 5/8"	11 1/2	32 1/16"	28 5/8"	17 1/2	50 3/16"	43 5/8"	23 1/2	67 11/16"	58 5/8"
6	17 1/8"	15 1/4"	12	34 1/8"	30 1/4"	18	51 5/8"	45 1/4"	24	68 7/8"	60 1/4"
6 1/2	18 9/16"	16 1/8"	12 1/2	35 13/16"	31 1/8"	18 1/2	53 1/16"	46 1/8"	24 1/2	70 5/16"	61 1/8"



ACTUAL SIZE - 63% OPEN

NO. OF UNITS	OPENING										
	WIDTH	HEIGHT									
1	2 3/4"	3 3/4"	12	17 7/8"	18 7/8"	23	33"	34"	34	48 1/8"	49 1/8"
2	4 1/8"	5 1/8"	13	19 1/4"	20 1/4"	24	34 3/8"	35 3/8"	35	49 1/2"	50 1/2"
3	5 1/2"	6 1/2"	14	20 5/8"	21 5/8"	25	35 3/4"	36 3/4"	36	50 7/8"	51 7/8"
4	6 7/8"	7 7/8"	15	22"	23"	26	37 1/8"	38 1/8"	37	52 1/4"	53 1/4"
5	8 1/4"	9 1/4"	16	23 3/8"	24 3/8"	27	38 1/2"	39 1/2"	38	53 5/8"	54 5/8"
6	9 5/8"	10 5/8"	17	24 3/4"	25 3/4"	28	39 7/8"	40 7/8"	39	55"	56"
7	11"	12"	18	26 1/8"	27 1/8"	29	41 1/4"	42 1/4"	40	56 3/8"	57 3/8"
8	12 3/8"	13 3/8"	19	27 1/2"	28 1/2"	30	42 5/8"	43 5/8"	41	57 3/4"	58 3/4"
9	13 3/4"	14 3/4"	20	28 7/8"	29 7/8"	31	44"	45"	42	59 1/8"	60 1/8"
10	15 1/8"	16 1/8"	21	30 1/4"	31 1/4"	32	45 3/8"	46 3/8"	43	60 1/2"	61 1/2"
11	16 1/2"	17 1/2"	22	31 5/8"	32 5/8"	33	46 3/4"	47 3/4"	44	61 1/8"	62 1/8"

STYLE - HK 705 - GRILLE

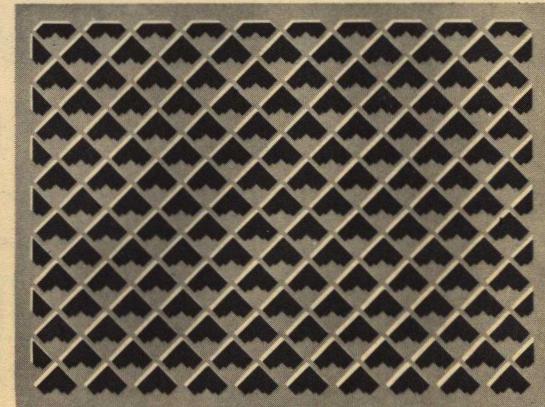
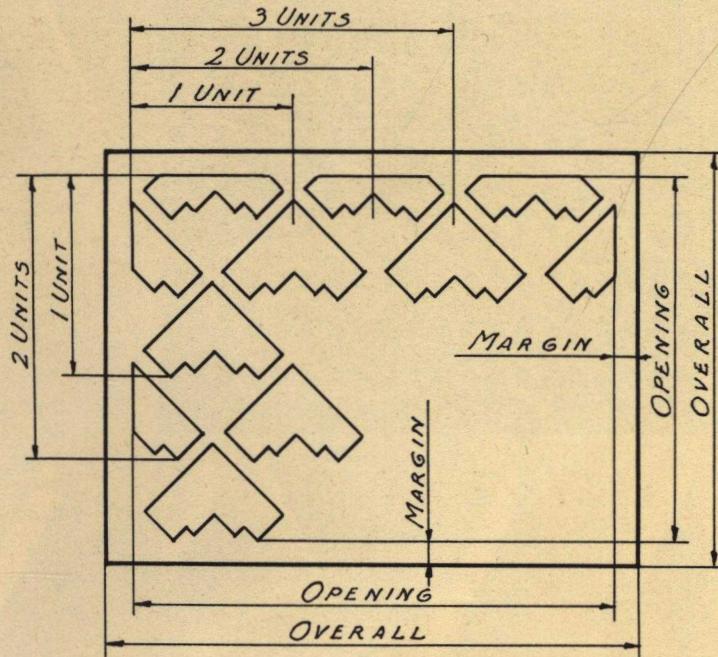
DESIGN PATENT APPLIED FOR

116,76

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.

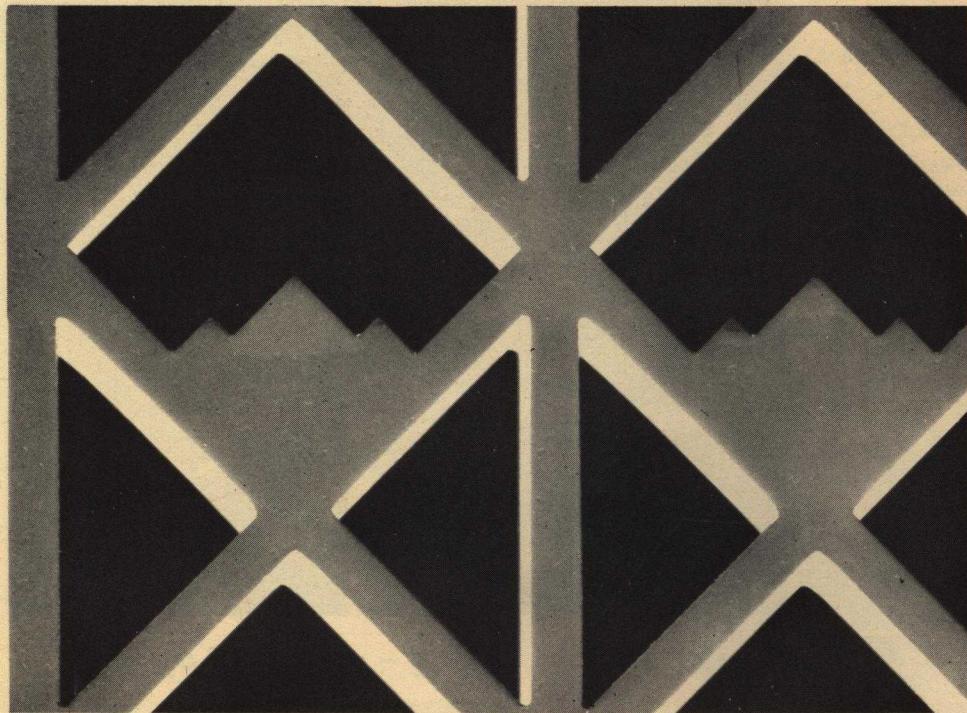
IMPORTANT - USE ODD
NUMBER OF UNITS TO MAKE
DESIGN SYMMETRICAL IN
OPENING WIDTH (SEE SKETCH).



STYLE-HK 705

STYLE-HK 720-GRILLE

DESIGN PATENT APPLIED FOR

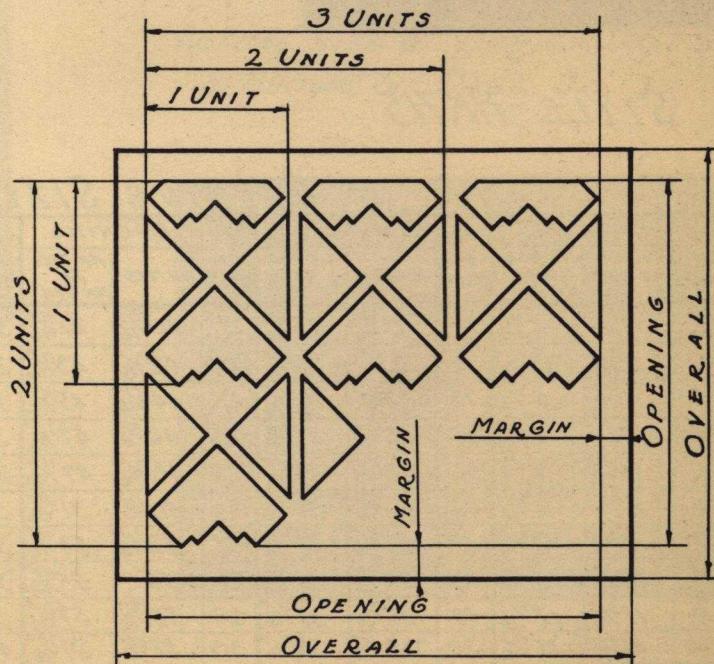
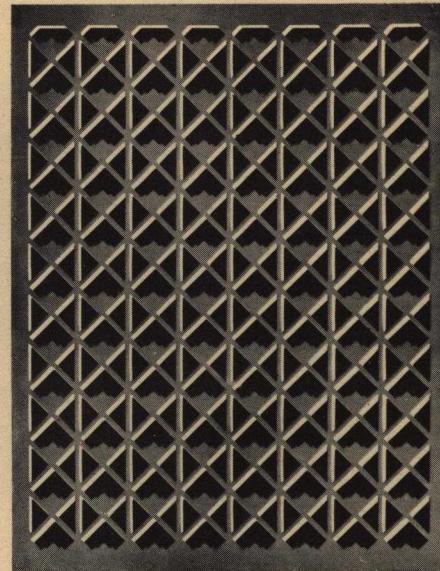


ACTUAL SIZE - STYLE HK 720 62% OPEN

NO. OF UNITS	OPENING										
	WIDTH	HEIGHT									
1	2 1/2"	3 23/32"	9	24 1/2"	25 23/32"	17	46 1/2"	47 23/32"	25	68 1/2"	69 23/32"
2	5 1/4"	6 15/32"	10	27 1/4"	28 15/32"	18	49 1/4"	50 15/32"	26	71 1/4"	72 15/32"
3	8"	9 1/32"	11	30"	31 1/32"	19	52"	53 1/32"	27	74"	75 1/32"
4	10 3/4"	11 3/32"	12	32 3/4"	33 3/32"	20	54 3/4"	55 3/32"	28	76 3/4"	77 3/32"
5	13 1/2"	14 23/32"	13	35 1/2"	36 23/32"	21	57 1/2"	58 23/32"	29	79 1/2"	80 23/32"
6	16 1/4"	17 15/32"	14	38 1/4"	39 15/32"	22	60 1/4"	61 15/32"	30	82 1/4"	83 15/32"
7	19"	20 7/32"	15	41"	42 7/32"	23	63"	64 7/32"	31	85"	86 7/32"
8	21 3/4"	22 3/32"	16	43 3/4"	44 3/32"	24	65 3/4"	66 3/32"	32	87 3/4"	88 3/32"

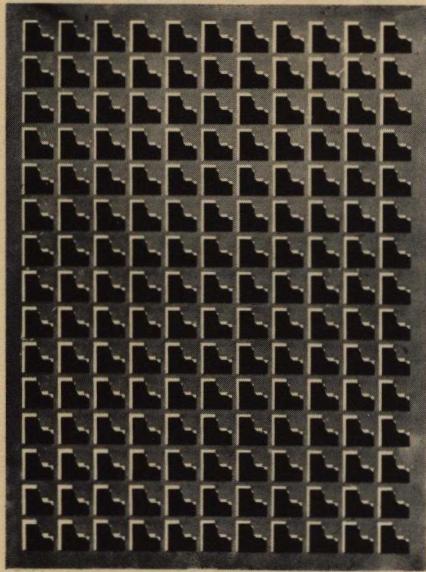
NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



STYLE-HK 715-GRILLE

DESIGN PATENT APPLIED FOR



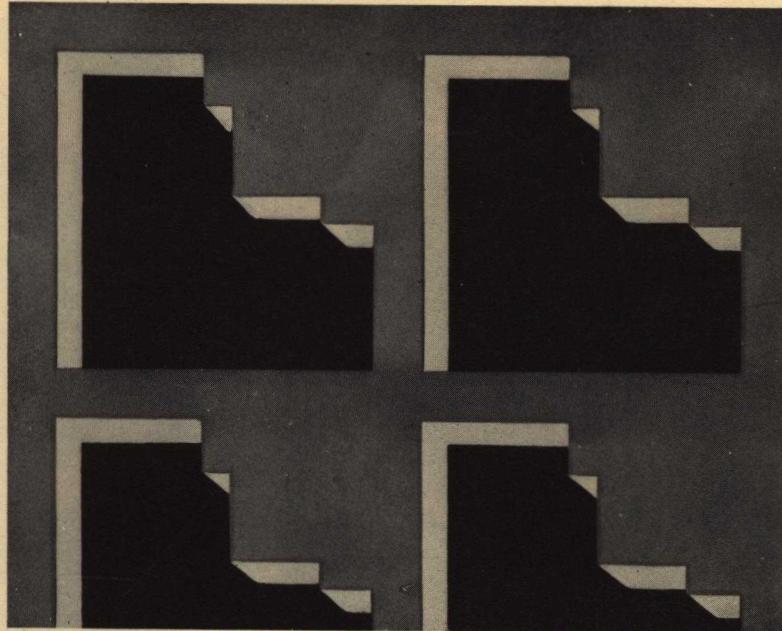
STYLE-HK715

TABLE OF OPENING SIZES

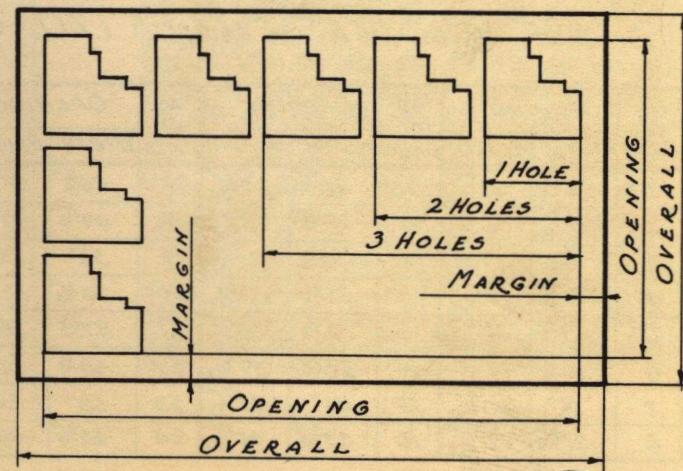
NO OF HOLES	OPENING		NO OF HOLES	OPENING		NO OF HOLES	OPENING		NO OF HOLES	OPENING	
	HK 715	HK 710 TO HK 714		HK 715	HK 710 TO HK 714		HK 715	HK 710 TO HK 714		HK 715	HK 710 TO HK 714
1	1 1/16"	1 1/16"	11	21 1/16"	21 1/16"	21	40 7/16"	41 1/16"	31	59 13/16"	61 1/16"
2	3 5/8"	3 1/4"	12	23"	23 1/16"	22	42 3/8"	43 1/16"	32	61 3/4"	63 1/16"
3	5 9/16"	5 1/16"	13	24 15/16"	25 1/16"	23	44 5/16"	45 1/16"	33	63 11/16"	65 1/16"
4	7 1/2"	7 1/16"	14	26 3/8"	27 1/16"	24	46 1/4"	47 1/16"	34	65 5/8"	67 1/16"
5	9 7/16"	9 1/16"	15	28 13/16"	29 1/16"	25	48 3/16"	49 1/16"	35	67 9/16"	69 1/16"
6	11 3/8"	11 1/16"	16	30 3/4"	31 1/16"	26	50 1/8"	51 1/16"	36	69 1/2"	71 1/16"
7	13 5/16"	13 1/16"	17	32 1/4"	33 1/16"	27	52 1/16"	53 1/16"	37	71 7/16"	73 1/16"
8	15 1/4"	15 1/16"	18	34 5/8"	35 1/16"	28	54"	55 1/16"	38	73 3/8"	75 1/16"
9	17 3/16"	17 1/16"	19	36 9/16"	37 1/16"	29	55 15/16"	57 1/16"	39	75 5/16"	77 1/16"
10	19 1/8"	19 1/16"	20	38 1/2"	39 1/16"	30	57 1/8"	59 1/16"	40	77 1/4"	79 1/16"

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

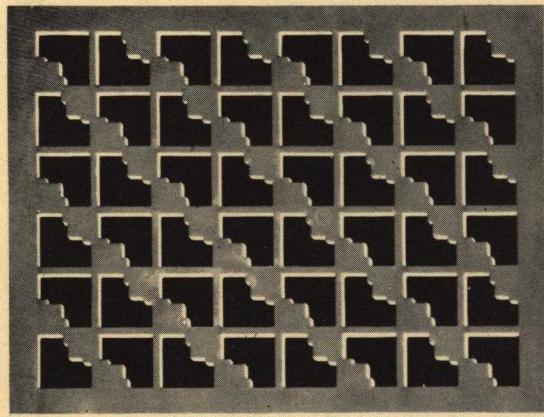
WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



ACTUAL SIZE - 63% OPEN

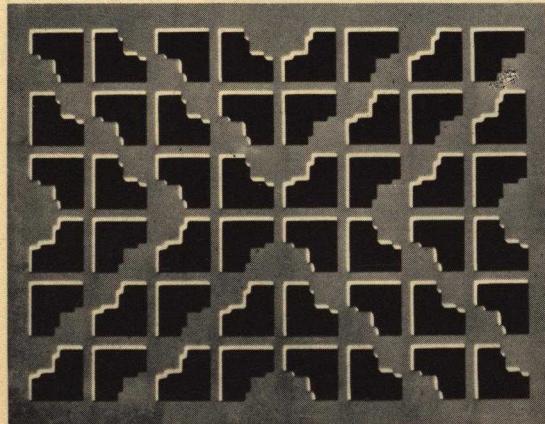


STYLE HK 710-HK 711-HK 712 HK 713-HK 714 GRILLES



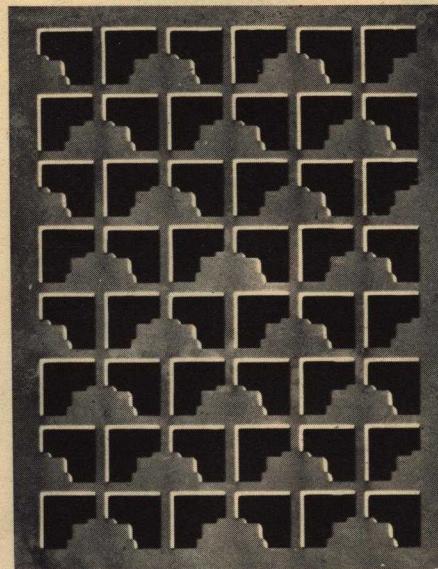
STYLE HK 710

OPEN AREA OF ALL DESIGNS
ON THIS PAGE - 59%



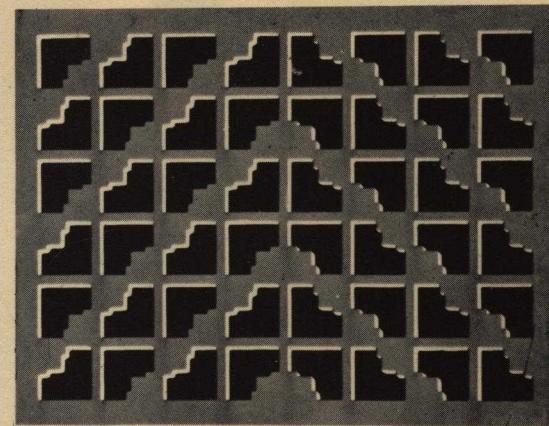
STYLE HK 713

THE GRILLES SHOWN ON
THIS PAGE ARE VARIOUS
APPLICATIONS OF THE
STYLE HK 715 PERFORATION

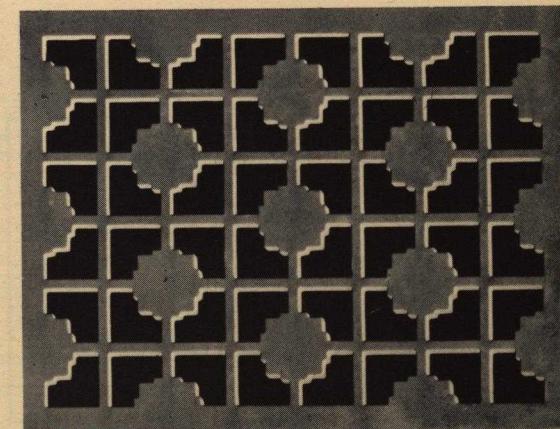


STYLE HK 711

FOR OPENING SIZES REFER
TO TABLE ON PAGE 32
USE EVEN NUMBER OF HOLES ONLY



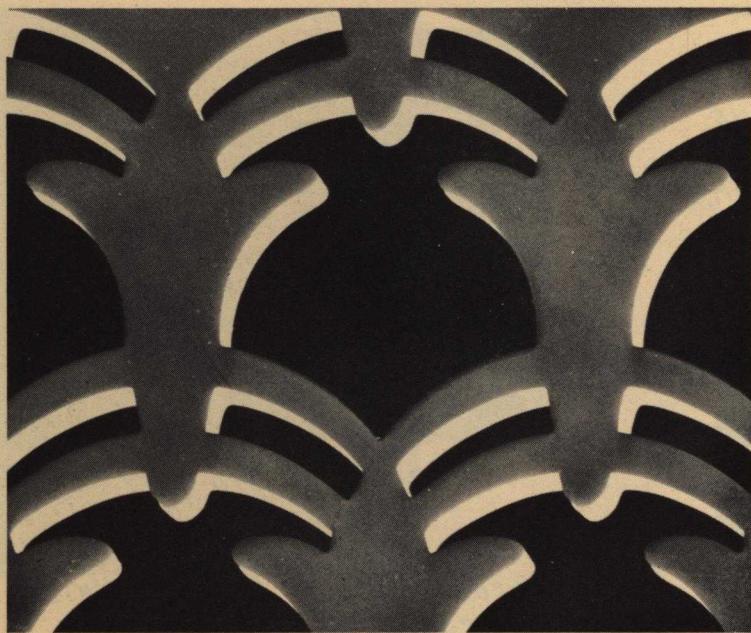
STYLE HK 712



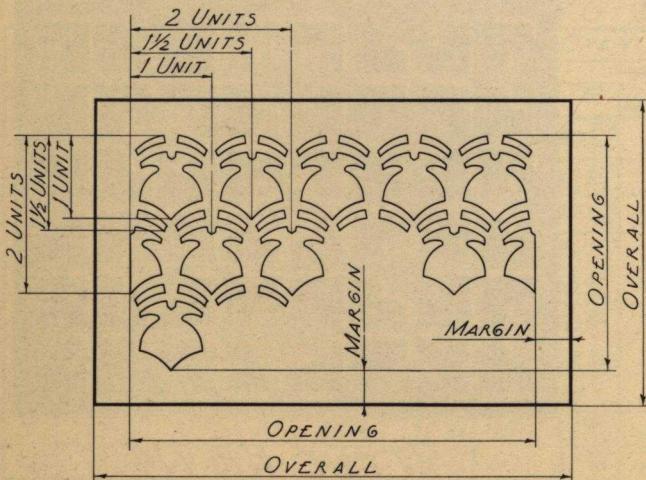
STYLE HK 714

STYLE - HK 230 - GRILLE

DESIGN PATENT APPLIED FOR



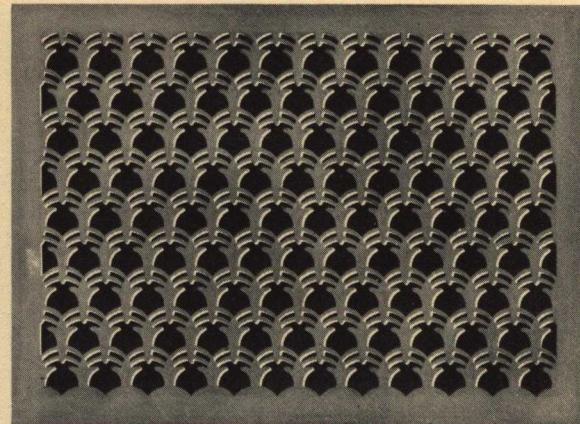
ACTUAL SIZE - 56% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.

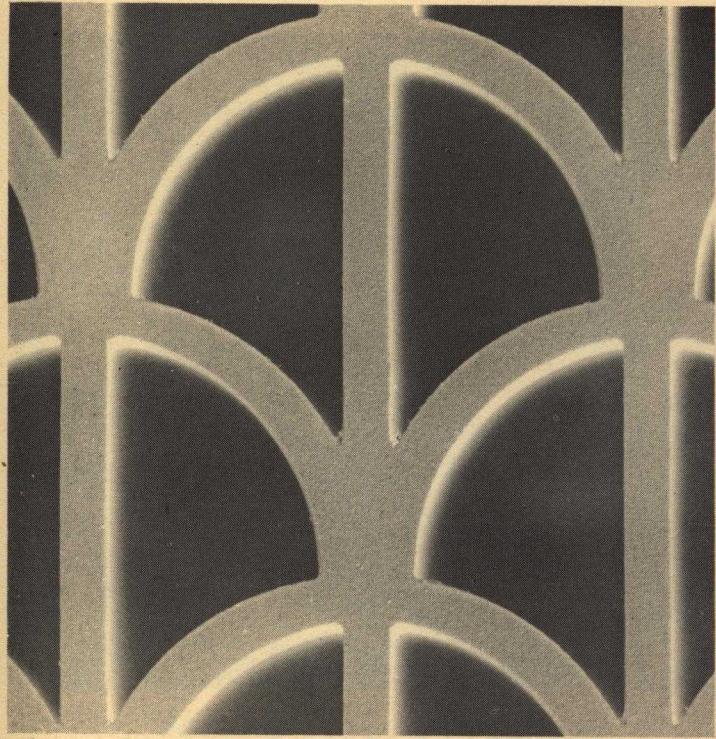
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



No of Units	OPENING										
	WIDTH	HEIGHT									
1	2 3/16"	2 1/4"	9 1/2	20 25/32"	18 5/8"	18	39 3/8"	36 1/4"	26 1/2	57 31/32"	52 5/8"
1 1/2	3 9/32"	2 5/8"	10	21 1/8"	20 1/4"	18 1/2	40 15/32"	36 5/8"	27	59 1/16"	54 1/4"
2	4 3/8"	4 1/4"	10 1/2	22 3/32"	20 5/8"	19	41 9/16"	38 1/4"	27 1/2	60 5/32"	54 5/8"
2 1/2	5 15/32"	4 5/8"	11	24 1/16"	22 1/4"	19 1/2	42 21/32"	38 5/8"	28	61 1/4"	56 1/4"
3	6 9/16"	6 1/4"	11 1/2	25 5/32"	22 5/8"	20	43 3/4"	40 1/4"	28 1/2	62 11/32"	56 5/8"
3 1/2	7 21/32"	6 5/8"	12	26 1/4"	24 1/4"	20 1/2	44 27/32"	40 5/8"	29	63 7/16"	58 1/4"
4	8 3/4"	8 1/4"	12 1/2	27 1/32"	24 5/8"	21	45 15/16"	42 1/4"	29 1/2	64 17/32"	58 5/8"
4 1/2	9 27/32"	8 5/8"	13	28 7/16"	26 1/4"	21 1/2	47 1/32"	42 5/8"	30	65 5/16"	60 1/4"
5	10 15/16"	10 1/4"	13 1/2	29 7/32"	26 5/8"	22	48 1/8"	44 1/4"	30 1/2	66 23/32"	60 5/8"
5 1/2	12 1/32"	10 5/8"	14	30 5/8"	28 1/4"	22 1/2	49 7/32"	44 5/8"	31	67 13/16"	62 1/4"
6	13 1/8"	12 1/4"	14 1/2	31 23/32"	28 5/8"	23	50 5/16"	46 1/4"	31 1/2	68 29/32"	62 5/8"
6 1/2	14 7/32"	12 5/8"	15	32 13/16"	30 1/4"	23 1/2	51 13/32"	46 5/8"	32	70"	64 1/4"
7	15 9/16"	14 1/4"	15 1/2	33 29/32"	30 5/8"	24	52 1/2"	48 1/4"	32 1/2	71 3/32"	64 5/8"
7 1/2	16 13/32"	14 5/8"	16	35"	32 1/4"	24 1/2	53 19/32"	48 5/8"	33	72 3/16"	66 1/4"
8	17 1/2"	16 1/4"	16 1/2	36 3/32"	32 5/8"	25	54 11/16"	50 1/4"	33 1/2	73 9/32"	66 5/8"
8 1/2	18 19/32"	16 5/8"	17	37 1/8"	34 1/4"	25 1/2	55 25/32"	50 5/8"	34	74 3/8"	68 1/4"
9	19 11/16"	18 1/4"	17 1/2	38 9/32"	34 5/8"	26	56 7/8"	52 1/4"	34 1/2	75 15/32"	68 5/8"

STYLE - Q - GRILLE

DIVIDED FISH SCALE

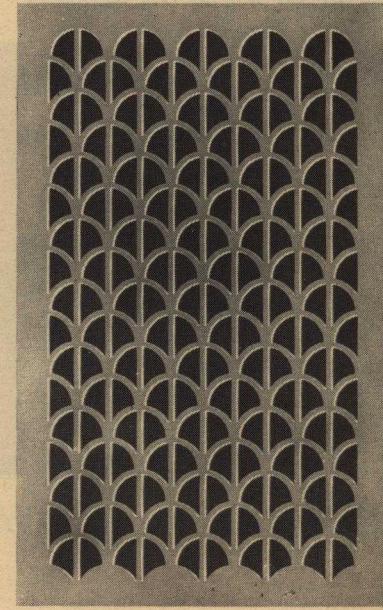
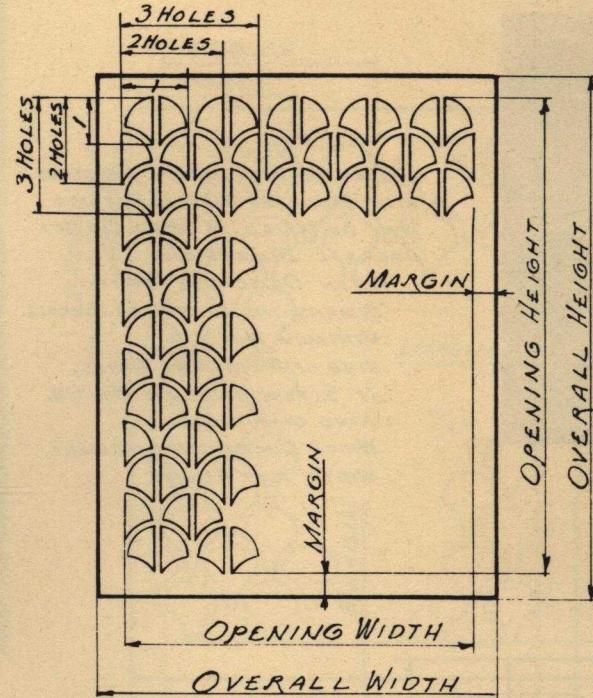


ACTUAL SIZE STYLE-Q-
65% OPEN

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL
MINIMUM MARGINS.

KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



STYLE-Q
65% OPEN

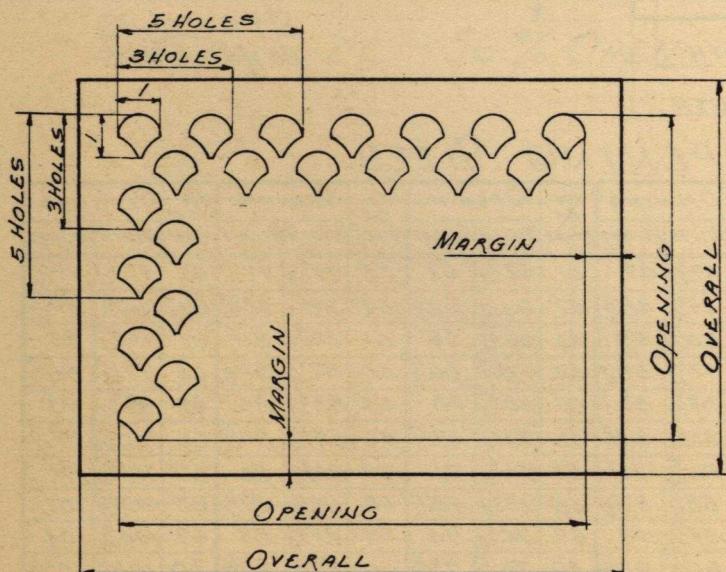
TABLE OF OPENING SIZES

No OF HOLES	OPENING													
	WIDTH	HEIGHT												
1	2 3/4	2 "	11	17 3/4	17 "	21	32 3/4	32 "	31	47 3/4	47 "	41	62 3/4	62 "
2	4 1/4	3 1/2	12	19 1/4	18 1/2	22	34 1/4	33 1/2	32	49 1/4	48 1/2	42	64 1/4	63 1/2
3	5 3/4	5 "	13	20 3/4	20 "	23	35 3/4	35 "	33	50 3/4	50 "	43	65 3/4	65 "
4	7 1/4	6 1/2	14	22 1/4	21 1/2	24	37 1/4	36 1/2	34	52 1/4	51 1/2	44	67 1/4	66 1/2
5	8 3/4	8 "	15	23 3/4	23 "	25	38 3/4	38 "	35	53 3/4	53 "	45	68 3/4	68 "
6	10 1/4	9 1/2	16	25 1/4	24 1/2	26	40 1/4	39 1/2	36	55 1/4	54 1/2	46	70 1/4	69 1/2
7	11 3/4	11 "	17	26 3/4	26 "	27	41 3/4	41 "	37	56 3/4	56 "	47	71 3/4	71 "
8	13 1/4	12 1/2	18	28 1/4	27 1/2	28	43 1/4	42 1/2	38	58 1/4	57 1/2	48	73 1/4	72 1/2
9	14 3/4	14 "	19	29 3/4	29 "	29	44 3/4	44 "	39	59 3/4	59 "	49	74 3/4	74 "
10	16 1/4	15 1/2	20	31 1/4	30 1/2	30	46 1/4	45 1/2	40	61 1/4	60 1/2	50	76 1/4	75 1/2

STYLED-HW
SMALL FISH SCALE

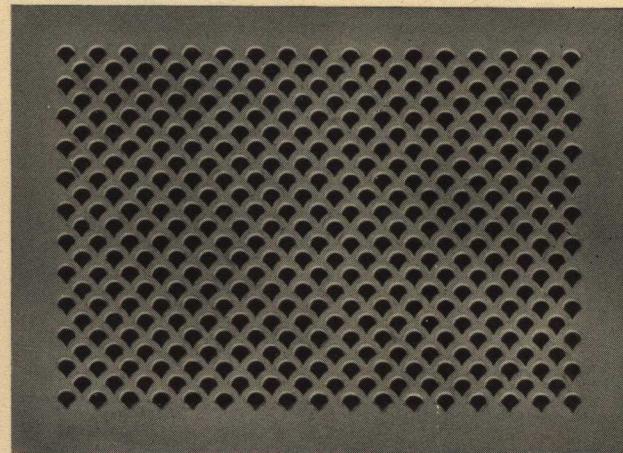


ACTUAL SIZE STYLED-H.W.
50% OPEN



NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.



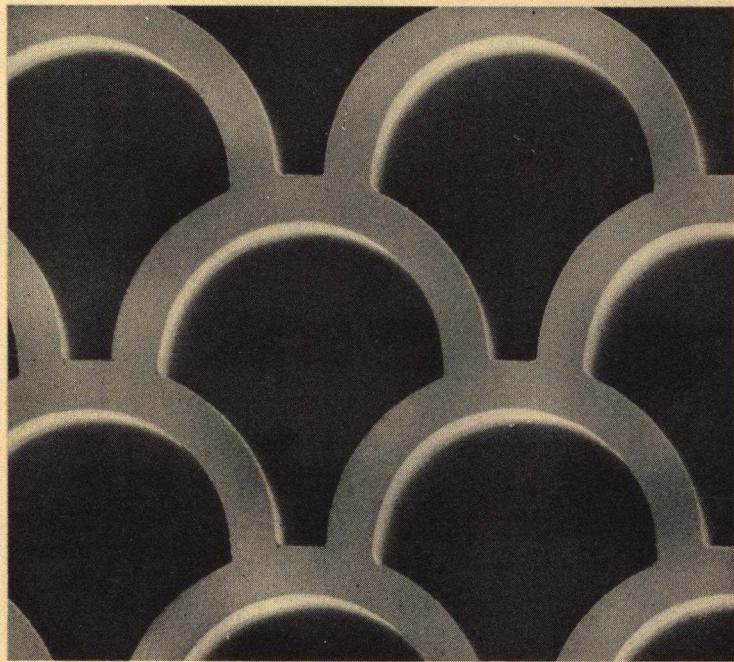
STYLED-H.W- 50% OPEN

TABLE OF OPENING SIZES

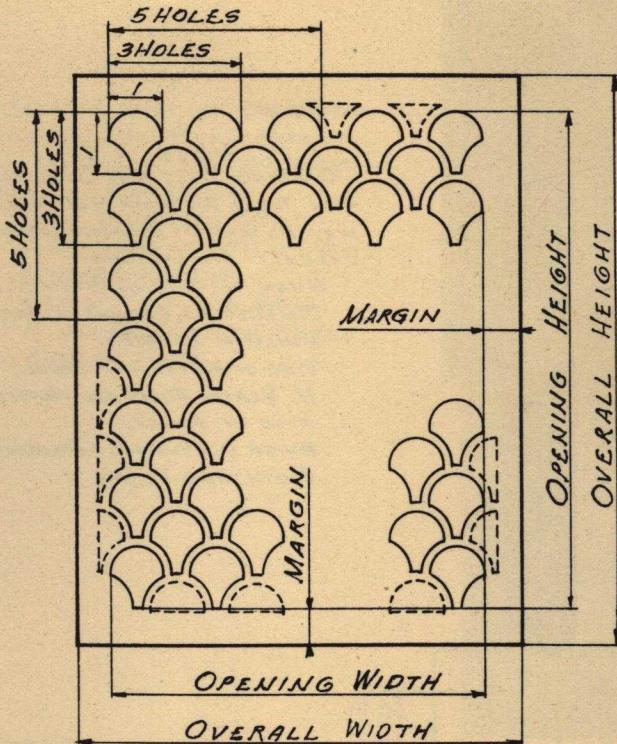
No. OF HOLES	OPENING SIZES	No. OF HOLES	OPENING SIZES	No. OF HOLES	OPENING SIZES	No. OF HOLES	OPENING SIZES	No. OF HOLES	OPENING SIZES
1	$5/8"$	21	$10\frac{5}{8}"$	41	$20\frac{5}{8}"$	61	$30\frac{5}{8}"$	81	$40\frac{5}{8}"$
3	$1\frac{5}{8}"$	23	$11\frac{5}{8}"$	43	$21\frac{5}{8}"$	63	$31\frac{5}{8}"$	83	$41\frac{5}{8}"$
5	$2\frac{5}{8}"$	25	$12\frac{5}{8}"$	45	$22\frac{5}{8}"$	65	$32\frac{5}{8}"$	85	$42\frac{5}{8}"$
7	$3\frac{5}{8}"$	27	$13\frac{5}{8}"$	47	$23\frac{5}{8}"$	67	$33\frac{5}{8}"$	87	$43\frac{5}{8}"$
9	$4\frac{5}{8}"$	29	$14\frac{5}{8}"$	49	$24\frac{5}{8}"$	69	$34\frac{5}{8}"$	89	$44\frac{5}{8}"$
11	$5\frac{5}{8}"$	31	$15\frac{5}{8}"$	51	$25\frac{5}{8}"$	71	$35\frac{5}{8}"$	91	$45\frac{5}{8}"$
13	$6\frac{5}{8}"$	33	$16\frac{5}{8}"$	53	$26\frac{5}{8}"$	73	$36\frac{5}{8}"$	93	$46\frac{5}{8}"$
15	$7\frac{5}{8}"$	35	$17\frac{5}{8}"$	55	$27\frac{5}{8}"$	75	$37\frac{5}{8}"$	95	$47\frac{5}{8}"$
17	$8\frac{5}{8}"$	57	$18\frac{5}{8}"$	57	$28\frac{5}{8}"$	77	$38\frac{5}{8}"$	97	$48\frac{5}{8}"$
19	$9\frac{5}{8}"$	39	$19\frac{5}{8}"$	59	$29\frac{5}{8}"$	79	$39\frac{5}{8}"$	99	$49\frac{5}{8}"$

STYLE - J. GRILLE

LARGE FISH SCALE

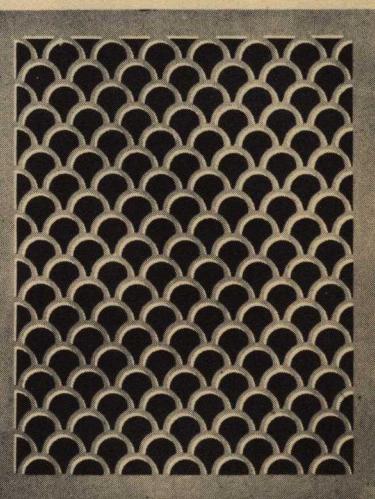
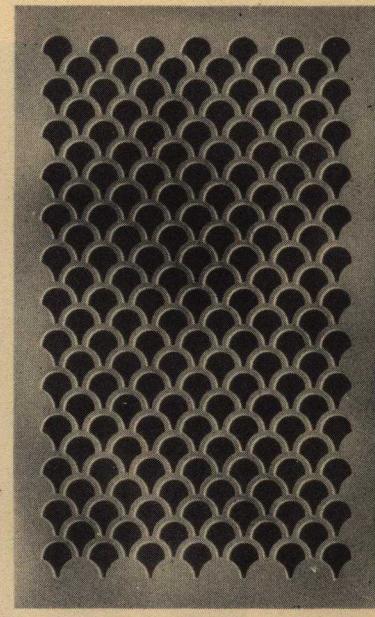


ACTUAL SIZE, STYLE - J-
65% OPEN



No of Holes	OPENING		OPENING		OPENING		OPENING		OPENING					
	WIDTH	HEIGHT	WIDTH	HEIGHT	WIDTH	HEIGHT	WIDTH	HEIGHT	WIDTH	HEIGHT				
1	1 1/2"	1 3/4"	15	17 1/4"	15 3/4"	29	33"	29 3/4"	43	48 3/4"	43 3/4"	57	64 1/2"	57 3/4"
3	3 3/4"	3 3/4"	17	19 1/2"	17 3/4"	31	35 1/4"	31 3/4"	45	51"	45 3/4"	59	66 3/4"	59 3/4"
5	6"	5 3/4"	19	21 1/4"	19 3/4"	33	37 1/2"	33 3/4"	47	53 1/4"	47 3/4"	61	69"	61 3/4"
7	8 1/4"	7 3/4"	21	24"	21 1/4"	35	39 3/4"	35 3/4"	49	55 1/4"	49 3/4"	63	71 1/4"	63 3/4"
9	10 1/2"	9 3/4"	23	26 1/4"	23 3/4"	37	42"	37 3/4"	51	57 3/4"	51 3/4"	65	73 1/2"	65 3/4"
11	12 3/4"	11 3/4"	25	28 1/2"	25 3/4"	39	44 1/4"	39 3/4"	53	60"	53 3/4"	67	75 3/4"	67 3/4"
13	15"	13 3/4"	27	30 3/4"	27 3/4"	41	46 1/2"	41 3/4"	55	62 1/2"	55 3/4"	69	78"	69 3/4"

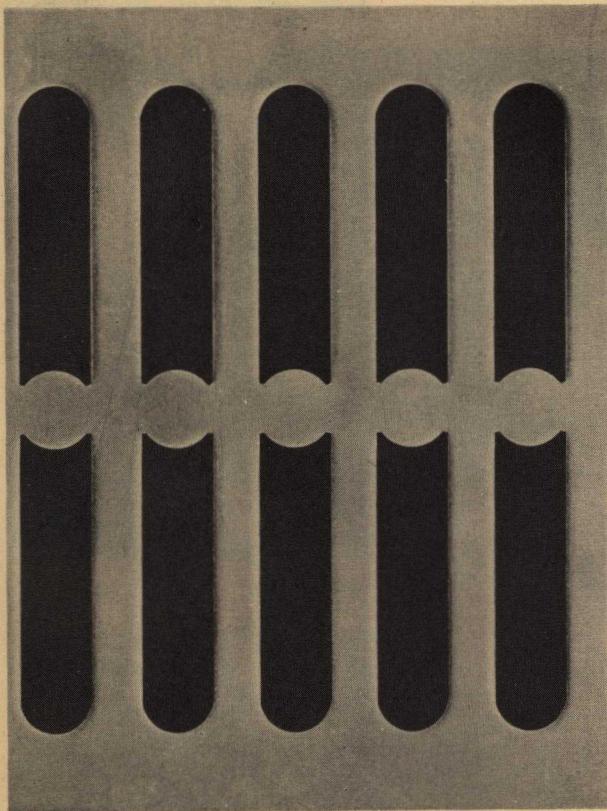
NOTE -
TABLE OF OPENING
SIZES AT LEFT APPLIES
TO GRILLES WITHOUT
PART HOLES. (SEE CUTS).
FOR PART HOLES ADD
3/4" TO "WIDTH" AND 5/16"
TO "HEIGHT" GIVEN IN
TABLE.



WITHOUT PART HOLES
WITH PART HOLES
NOT FURNISHED UNLESS SPECIFIED

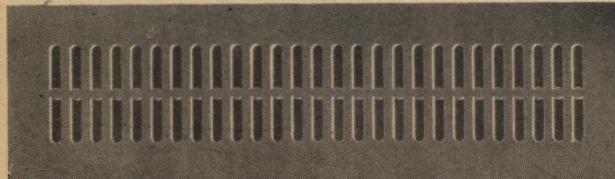
STYLE - S

VERTICAL SLOTS

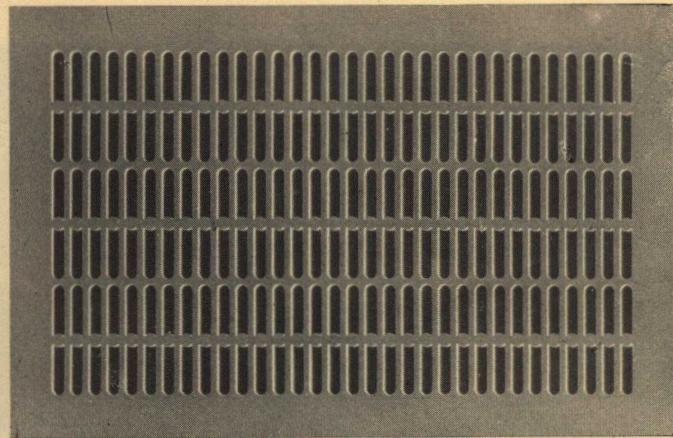


ACTUAL SIZE STYLE S

STYLE S - 50%

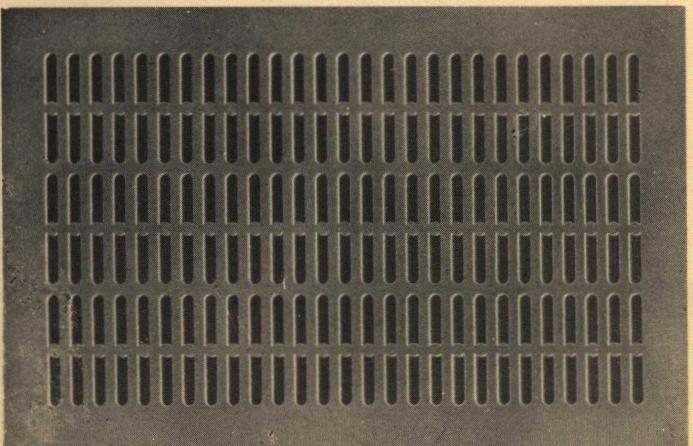


NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.
WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL.
MINIMUM MARGINS.
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,
WHICH DIMENSIONS REPRESENT,
WIDTH AND HEIGHT.

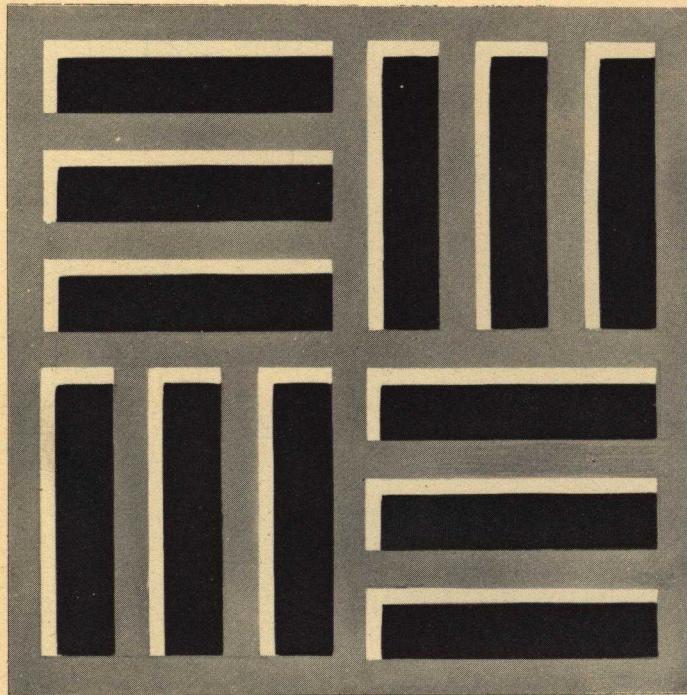


STYLE S - CLOSE SPACING 56% OPEN

STYLE S - NORMAL SPACING 50% OPEN



STYLE - HK III - GRILLE

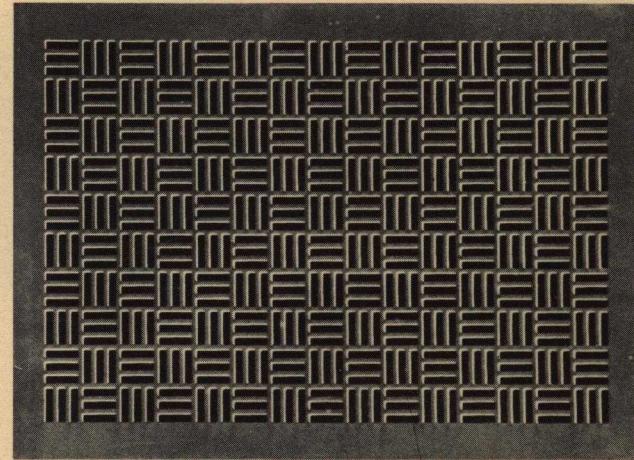


ACTUAL SIZE - 60% OPEN

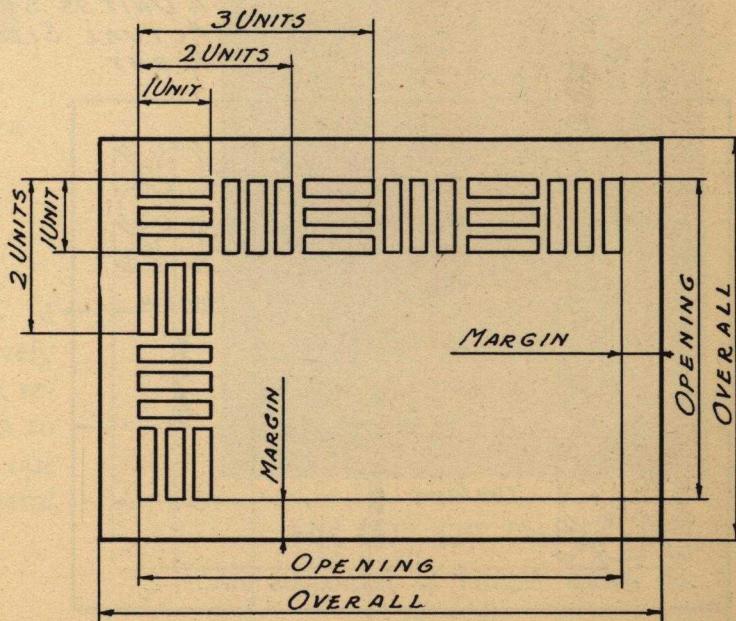
NO. OF UNITS	OPENING SIZES								
1	1 1/2"	10	16 1/16"	19	31 7/8"	28	47 1/16"	37	62 1/4"
2	3 3/16"	11	18 3/8"	20	33 9/16"	29	48 3/4"	38	63 15/16"
3	4 7/8"	12	20 1/16"	21	35 1/4"	30	50 7/16"	39	65 5/16"
4	6 9/16"	13	21 3/4"	22	36 15/16"	31	52 1/8"	40	67 5/16"
5	8 1/4"	14	23 7/16"	23	38 5/8"	32	53 13/16"	41	69"
6	9 15/16"	15	25 1/8"	24	40 5/16"	33	55 1/2"	42	70 1/16"
7	11 5/8"	16	26 13/16"	25	42"	34	57 3/16"	43	72 3/16"
8	13 5/16"	17	28 1/2"	26	43 11/16"	35	58 7/8"	44	74 1/16"
9	15"	18	30 3/16"	27	45 3/8"	36	60 9/16"	45	75 3/4"

NOTE
OPENING SIZES MUST CORRESPOND
WITH TABLE BUT WIDTH OF MARGINS
MAY BE VARIED TO OBTAIN CORRECT
OVERALL DIMENSIONS.

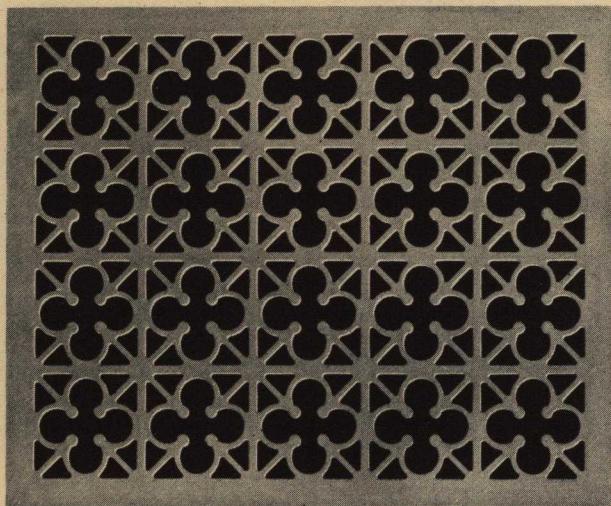
WHEN ORDERING SPECIFY:
DIMENSIONS, OPENING OR OVERALL,
MINIMUM MARGINS,
KIND OF METAL AND GAUGE,
IF SCREW HOLES ARE WANTED,
KIND OF FINISH,



STYLE - HK III

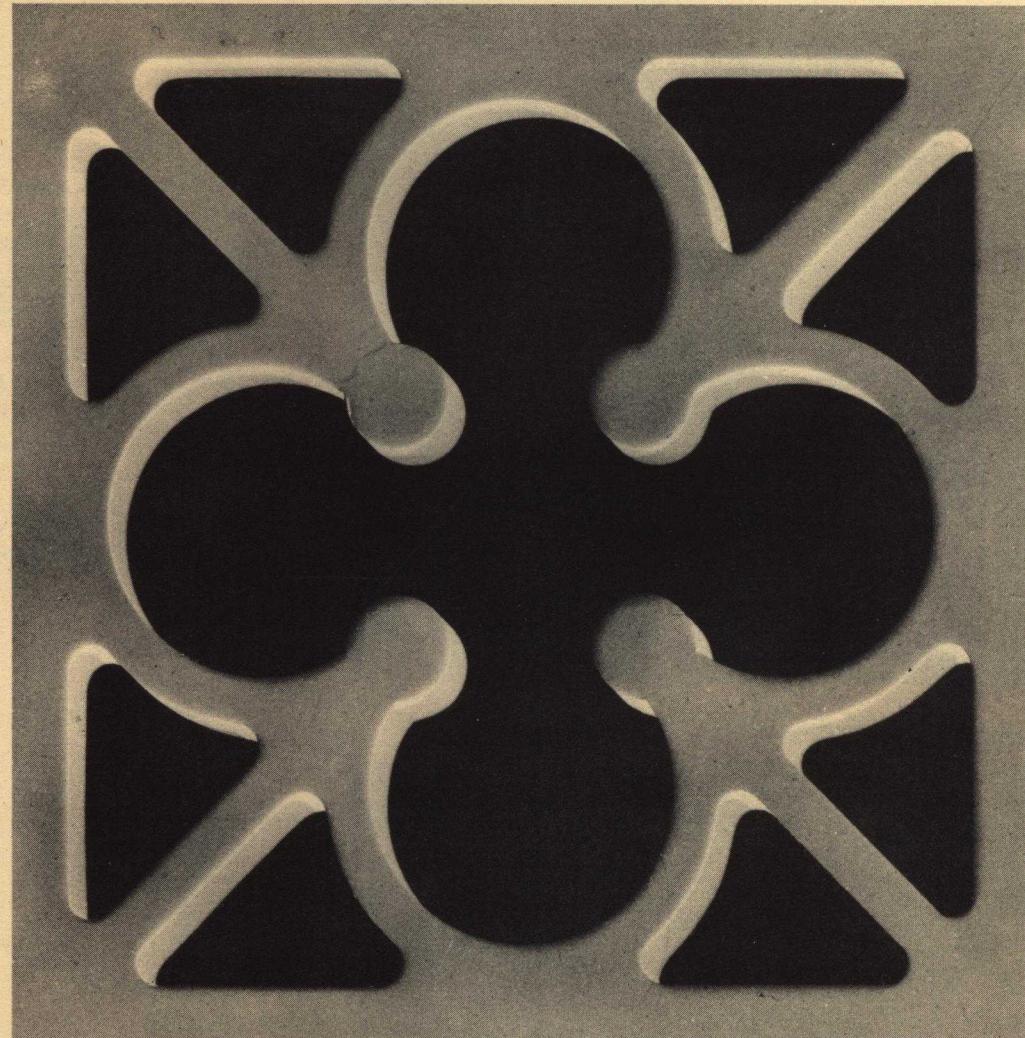
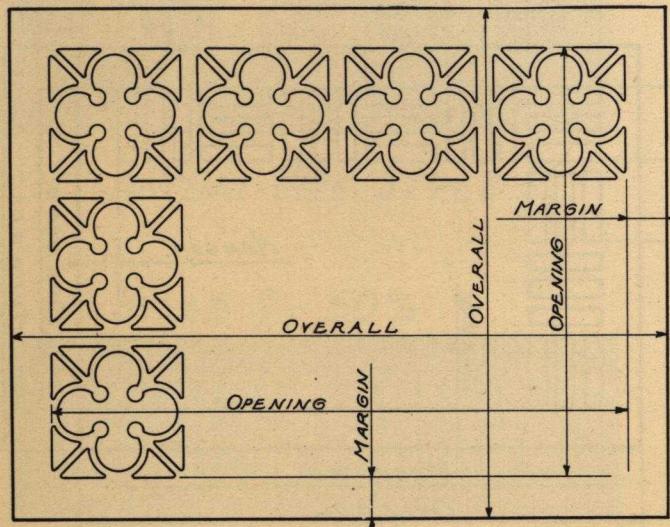


STYLE-U-GRILLE

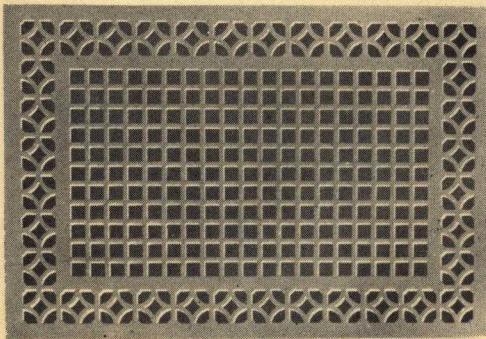


STYLE-U-66% OPEN

A UNIT IS SHOWN
ACTUAL SIZE AT
RIGHT.

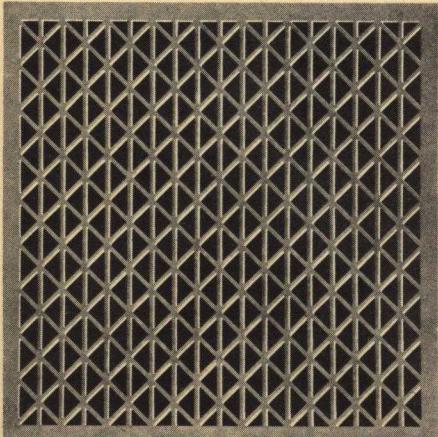


NO. OF UNITS	OPNG. SIZES																		
1	4 $\frac{1}{8}$ "	3	15 $\frac{3}{8}$ "	5	25 $\frac{1}{8}$ "	7	36 $\frac{3}{8}$ "	9	46 $\frac{7}{8}$ "	11	57 $\frac{3}{8}$ "	13	67 $\frac{7}{8}$ "	15	78 $\frac{3}{8}$ "	17	88 $\frac{7}{8}$ "	19	99 $\frac{3}{8}$ "
2	10 $\frac{1}{8}$ "	4	20 $\frac{5}{8}$ "	6	31 $\frac{1}{8}$ "	8	41 $\frac{5}{8}$ "	10	52 $\frac{1}{8}$ "	12	62 $\frac{5}{8}$ "	14	73 $\frac{1}{8}$ "	16	83 $\frac{5}{8}$ "	18	94 $\frac{1}{8}$ "	20	104 $\frac{5}{8}$ "



Style MK—55% Open

Border of Style M (page 21) with $\frac{7}{8}$ " Plain Lattice (page 10).

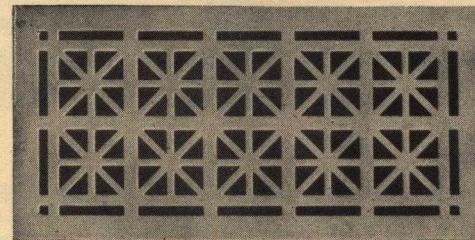


HK 723—60% Open

See page 31 for actual size detail.

Three suggestions for finishing grilles with border designs.

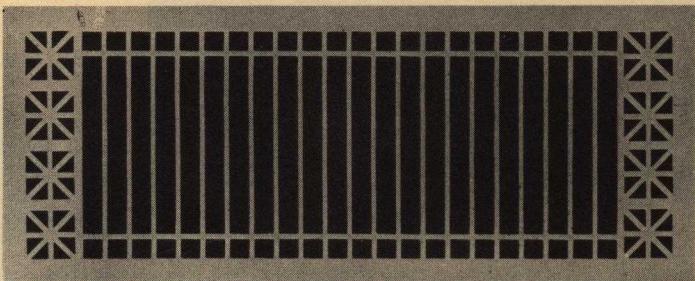
Designers are invited to combine whatever designs they may select in order to obtain desired effects.



Style NL—45% Open

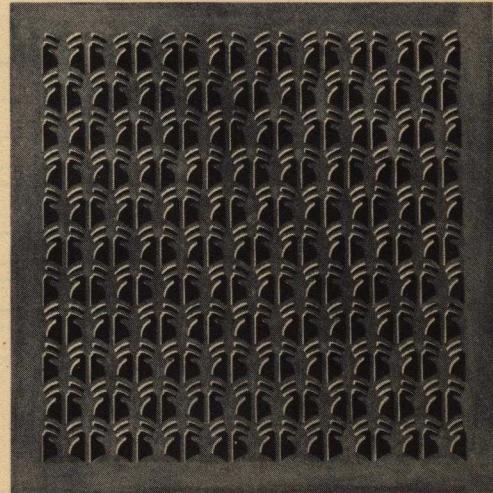
This is Style L (page 17) finished with a slotted border design.

Adaptations and combinations of designs are easily and inexpensively produced. No costly patterns are required. We simply use stock dies to punch the designs selected. All of our grilles are made from rolled metal plates and are unbreakable.



Style LT—71% Open

Style L (page 17) with slots 1" wide.

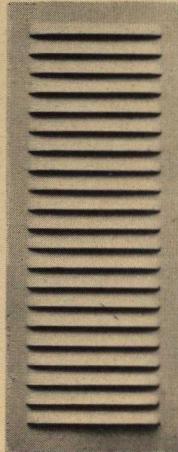


HK 233—42% Open

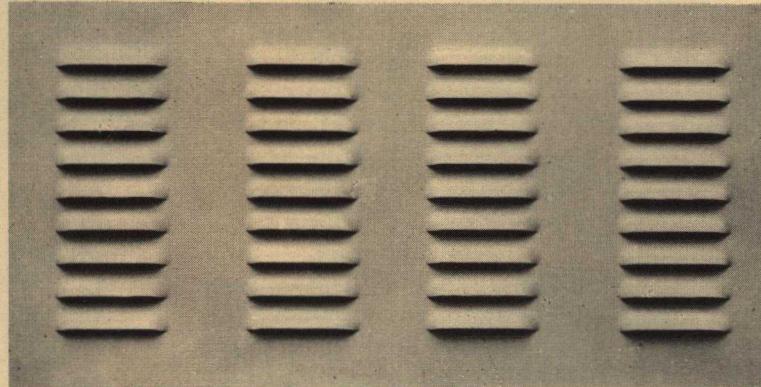
An adaptation of HK230 shown on page 34.

Fixed Louvers

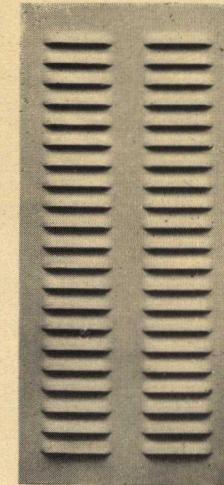
Used where ventilation is wanted without a view beyond the grille. Furnished in No. 16 gauge steel or bronze.



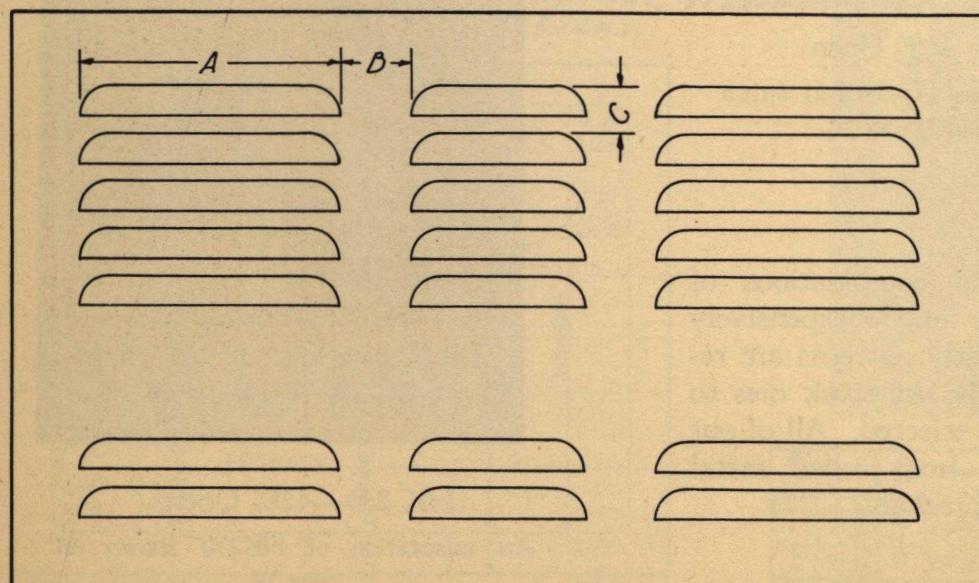
7" Louver



5½" Louver



3½" Louver



Dimension A:

$3\frac{1}{2}$ ", $5\frac{1}{2}$ " or 7"

Dimension B:

$1\frac{1}{8}$ " minimum for $3\frac{1}{2}$ " louver.

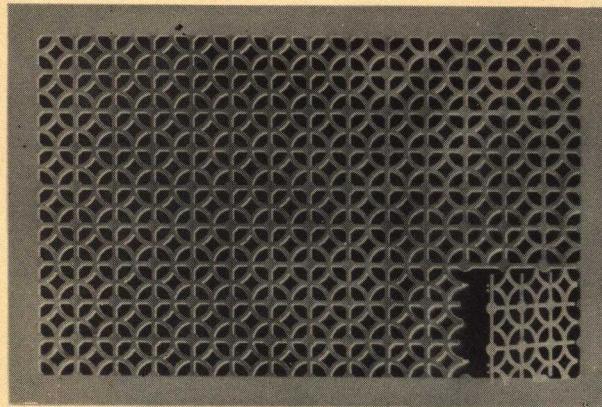
$1\frac{1}{8}$ " minimum for $5\frac{1}{2}$ " louver.

$1\frac{3}{8}$ " minimum for 7" louver.

Wherever $3\frac{1}{2}$ " and $5\frac{1}{2}$ " or $3\frac{1}{2}$ " and 7" louvers are adjacent the $1\frac{3}{8}$ " minimum may be used.

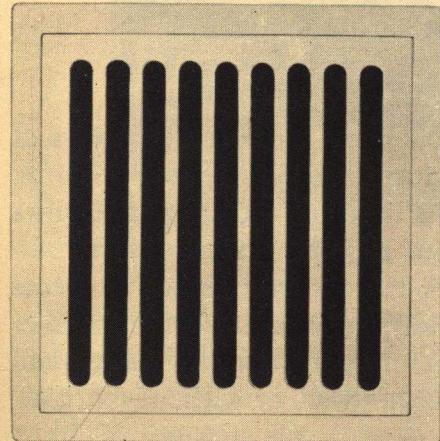
Dimension C:

Must always be 1".



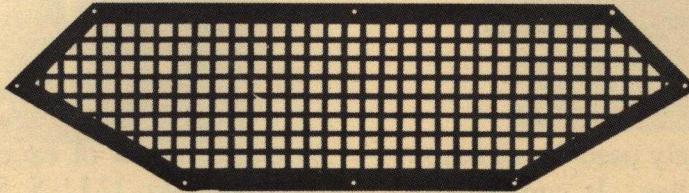
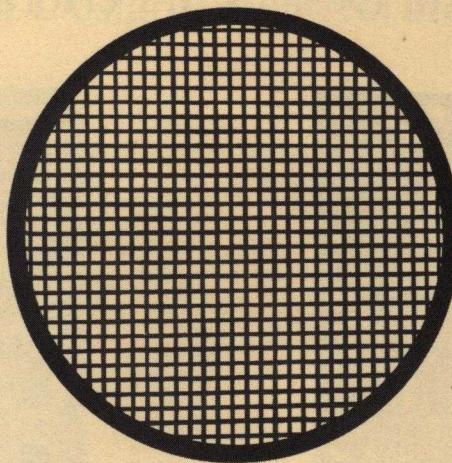
An Invisible Hand Hole Door

Any of our grilles can be fitted with this hand opening which is really a sturdily hinged door cleverly concealed when closed.



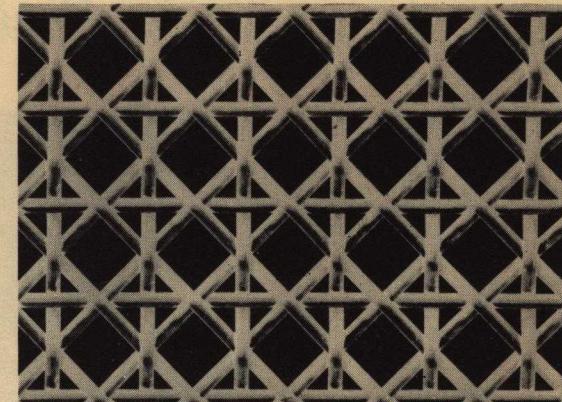
Sanitary Grille

A type of grille popular for use in hospitals because it offers a minimum of surface for the collection of dust.



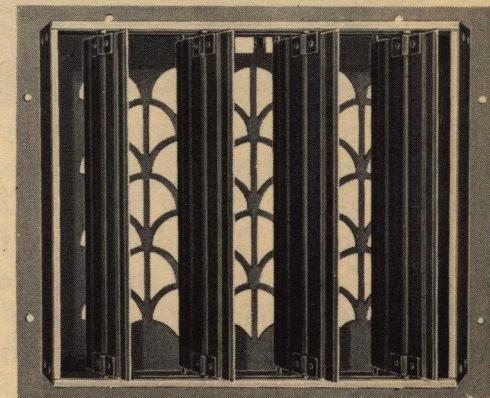
Grilles of Odd Shapes

All of our grille designs can be furnished in circles or odd shapes with or without blank margins. We can also form grilles to fit curved walls or corners.



Metalace Design No. 10

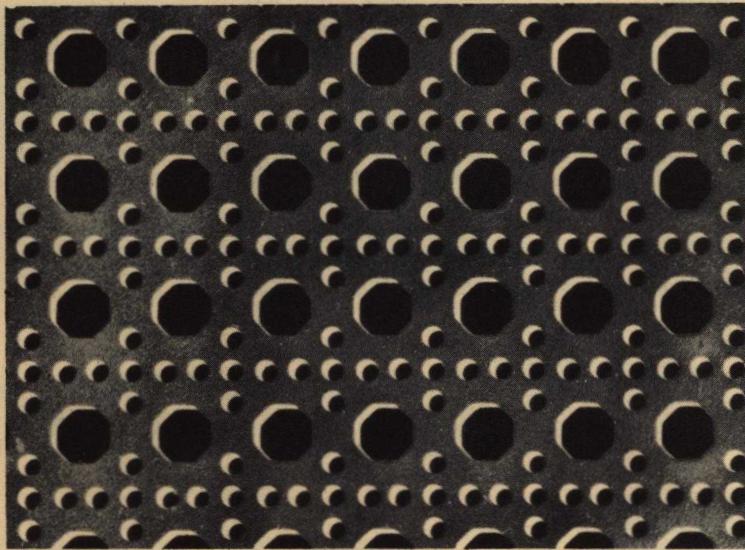
A grille made of woven metal strands. We carry a large stock of various designs of this attractive type of grille in both steel and bronze. Send for special folder.



Grille with Movable Louvers

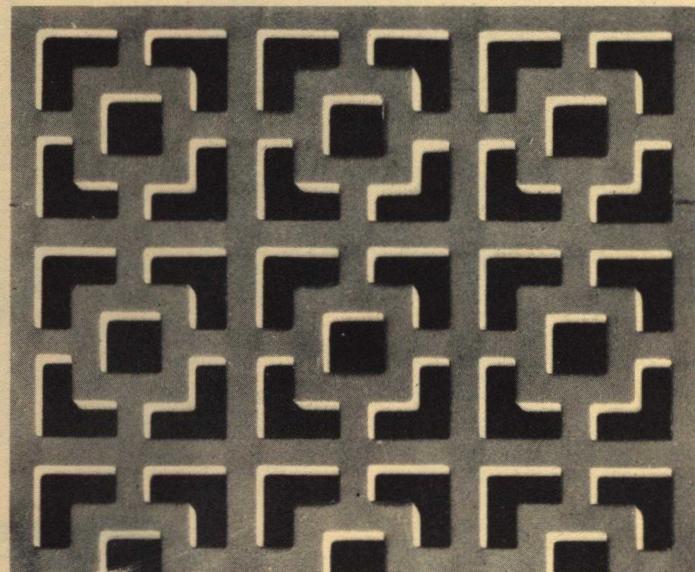
Any design or size of grille can be fitted with movable shutters or louvers operated by a knob on the face, a removable key or by a chain.

Ornamental Designs in Perforated Sheets



Cane Design, Actual Size—36% Open

An attractive and very popular design widely used for radiator cabinets, metal beds, chairs, stoves and grilles. It can be furnished in gauges ranging from No. 26 to No. 16 and is carried in stock in Nos. 24, 22 and 20 gauge furniture quality steel sheets 36" x 120", and several smaller sizes. It is customary to use it without blank margins, but it can also be furnished to special exact sizes either with or without margins. Note that the large holes are octagonal which distinguishes our product from cheaper grades.

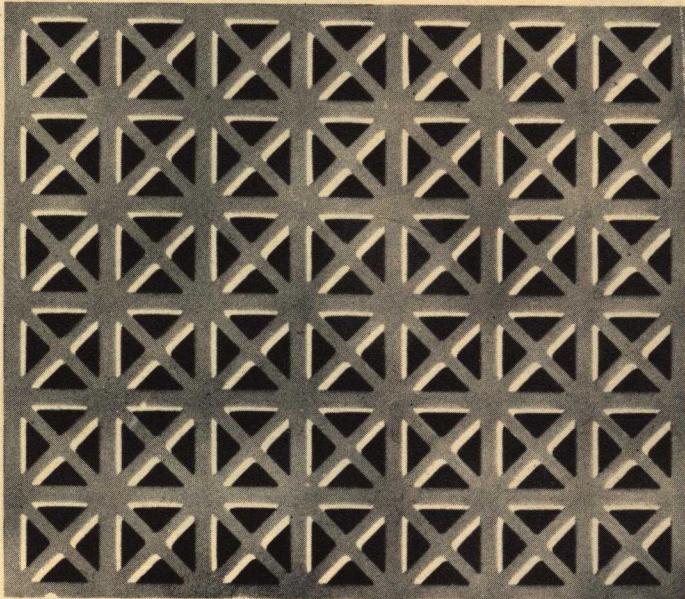


Style A-1, Actual Size—45% Open

A classic motif of excellent proportion produced in sheets of No. 20 and No. 22 U. S. S. gauge furniture quality steel, bronze, aluminum, and other metals. It is used for architectural grilles and also for grille panels in heaters, radiator enclosures, humidifiers, and similar articles. Style A-1 is carried in stock in sheets of No. 20 and No. 22 steel 36" x 120" and also in several smaller sizes. Stock sheets have no blank margins, but this design can be made up in special exact sizes either with or without margins.

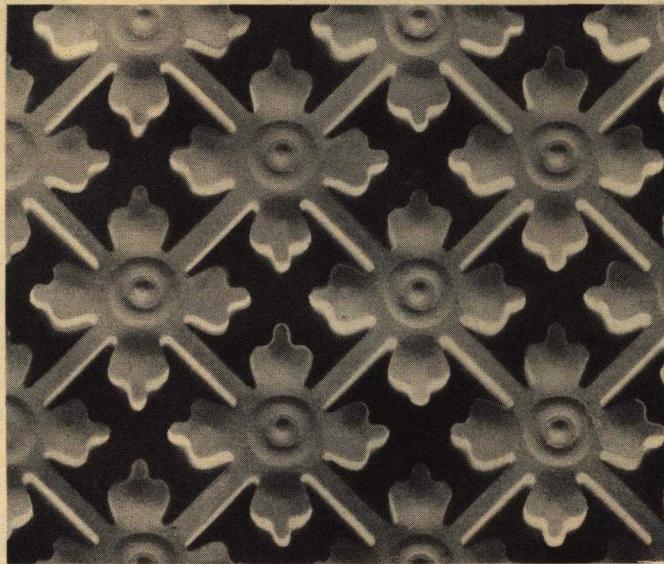
Note. Other designs produced in light gauge sheets are the $\frac{1}{2}$ " Plain Lattice with $\frac{1}{4}$ " Bridges shown on page 8 and Style I (clover leaf and round) shown on page 22.

Ornamental Designs in Perforated Sheets



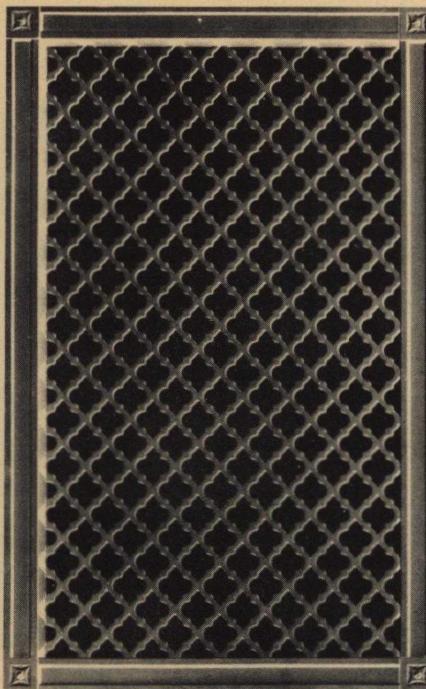
Perfex Actual Size—40% Open

This beautiful lacelike design is used extensively for radiator enclosure panels and similar installations where a small design is required in order to provide maximum concealment and where no blank margins are needed. It is stocked and generally furnished in No. 22 U. S. S. gauge furniture quality steel, but is also made in No. 24 gauge. Carried in stock in sheets 36" x 120" and in several smaller sizes. Perfex can also be furnished in aluminum, bronze and other sheet metals.



Style Y—Embossed, Actual Size—45% Open

This unusual embossed flower design has long been a favorite of foreign designers, and until we recently built the perforating tools, it was available only in odd-sized imported sheets. We now carry in stock sheets 38" x 120" in No. 20 U. S. S. gauge furniture quality steel but it can be furnished in any size of sheet and also in bronze, and aluminum. It can not be furnished with blank margins but it makes a very interesting grille when mounted in our *Grilframe* which is illustrated on page 46.



Style C—72% Open

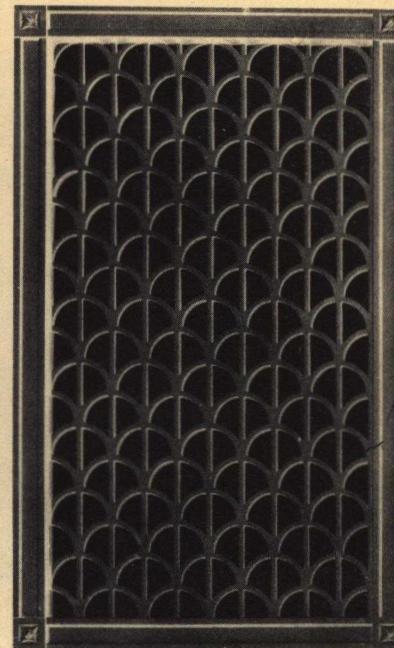
These grilles are handsome and unusual; sturdy in construction, and can be furnished at low cost without delay in shipment.

When specifying this type of grille, give the grille design and the gauge of steel and add "**Grilframe** construction." Also indicate whether finished in prime coat, enamel, or plated finish.

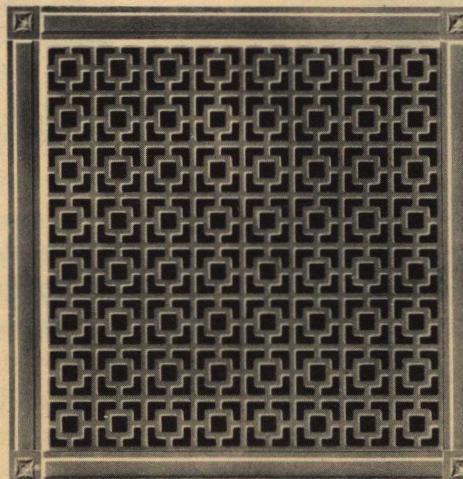


Trade Mark Registered

Grilframe is the name given to a new patented (U. S. Patent No. 1,822,909) scheme of fabrication by means of which grilles of any size can be assembled from stock parts. The frame is of heavy drawn steel and the corners are die castings. The grille itself is cut out of large stock sheets and can be of any of the designs illustrated in this catalog.



Style Q—65% Open

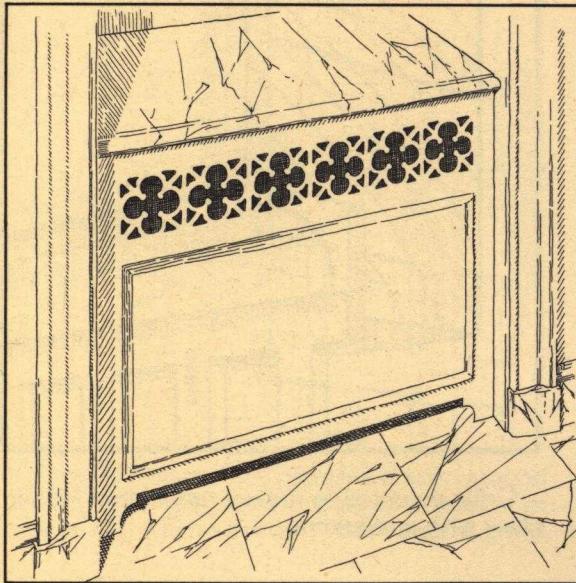


Style A—52% Open

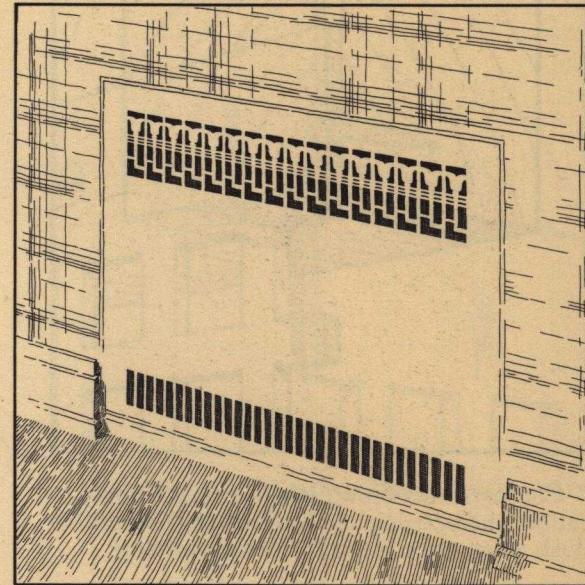
Agents have been established in all large cities with a stock of 12' frame strips, corners and grille sheets ready to make immediate delivery.

Details of this new construction with illustrations of many of our standard grille designs are presented in an interesting booklet "**Grilframe**" which will be sent upon request.

Grille Panels For Concealed Radiators

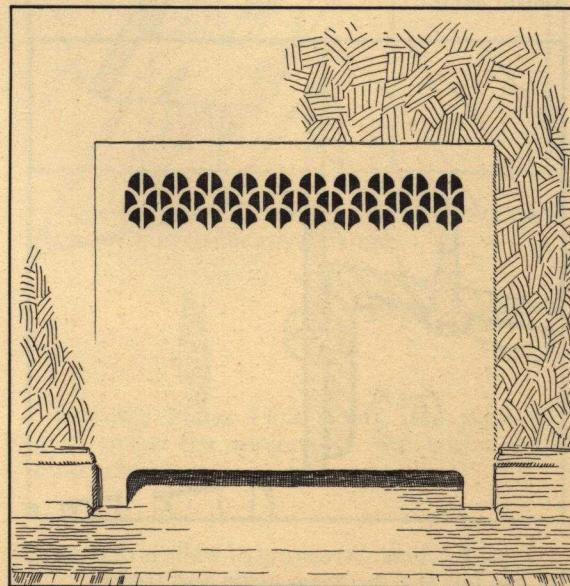


The concealed type of radiator is becoming very popular and justly so, but it brings with it the problem of an efficient yet attractive grille panel. Many makers of concealed radiators have developed a standard line of panels but frequently these do not satisfy the demands of particular architects.



We show here three suggestions to illustrate the individual effects which can be obtained by using our grille designs.

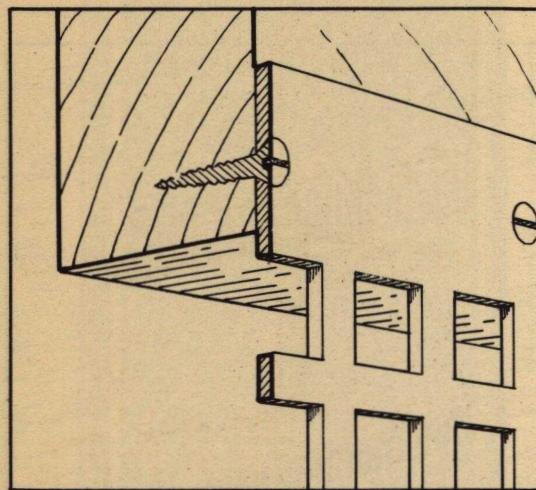
All of the designs illustrated in this catalog may be used separately or in combination and we are prepared to fabricate the panels in accordance with the architects specifications.



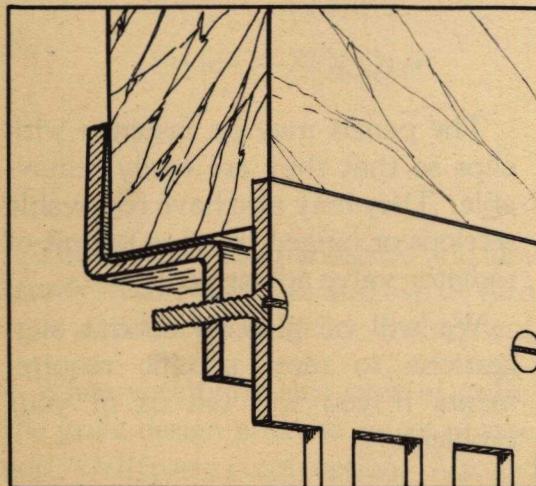
The panels may be fastened with clips so that they are easily removable. They may also have removable sections or hinged doors to permit of radiator valve adjustment.

We will be glad to submit suggestions to meet specific requirements if you will tell us of your problem.

Screw Holes — Frame Construction



Countersunk Screw Holes—It is advisable to rabbet the opening so that the grille surface is flush when grille is used in a radiator seat.



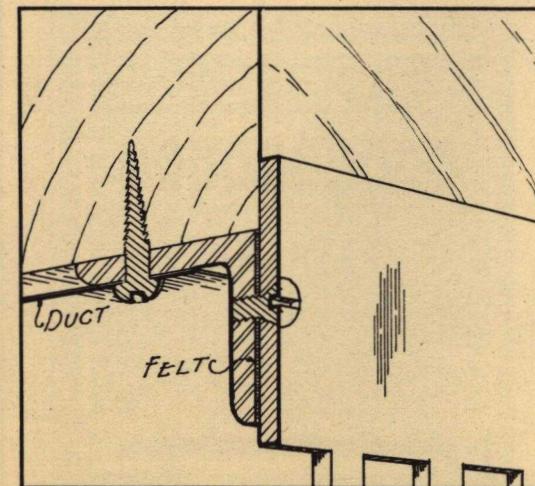
"Z" Clips for mounting grilles on marble walls.

Unless specified, we do not put in screw holes or provide frames, but we are prepared to do this work if desired.

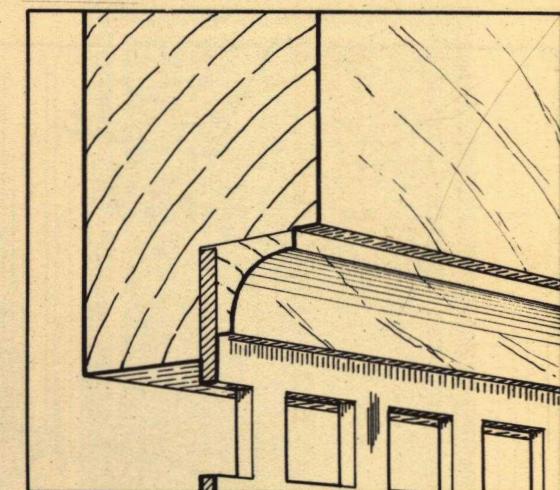
There are many ways of mounting grilles and many types of frames. We show here a few standard details most commonly used but we can make any type of frame which may be required.

When screw holes are ordered they will be countersunk and spaced on about 12" centers unless specified to the contrary.

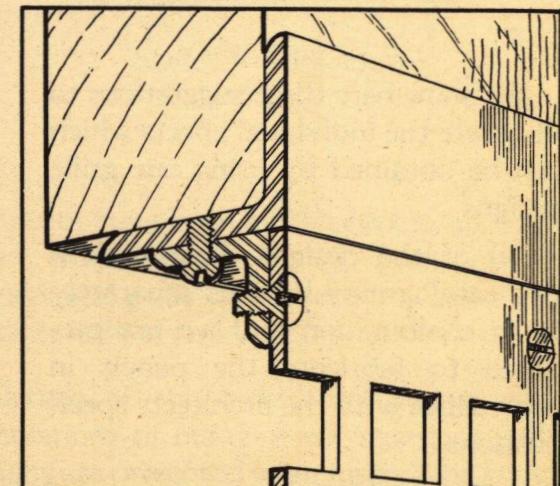
Order Frames by type shown here or send detail sketch.



Type J Frame. Streaking of walls is decreased by the felt seal between grille and frame.

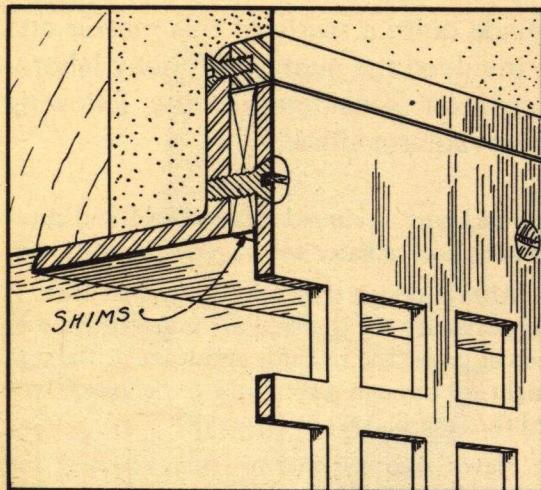


Grille mounted in a deep rabbet and held in place with a moulding.

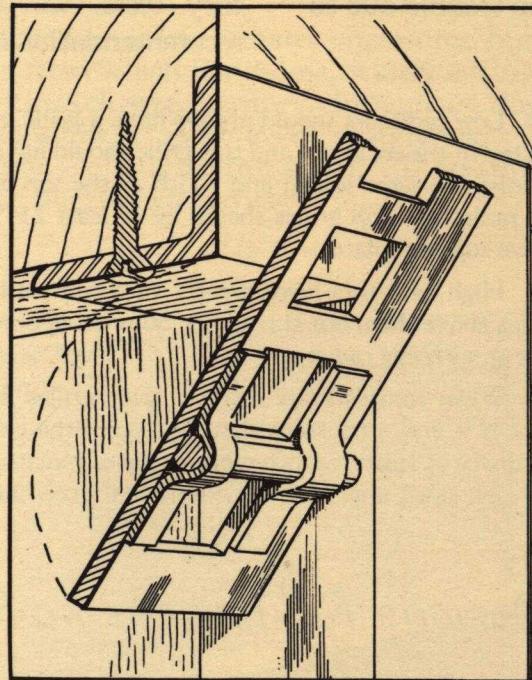


Type E Frame. Grille mounted in frame by means of angle lugs.

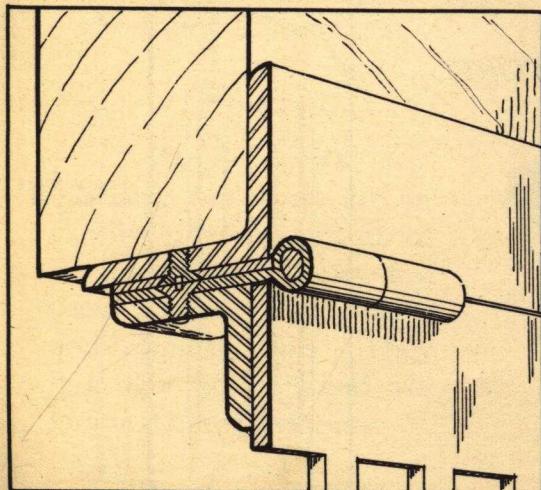
Frame Construction — Hinged Grilles



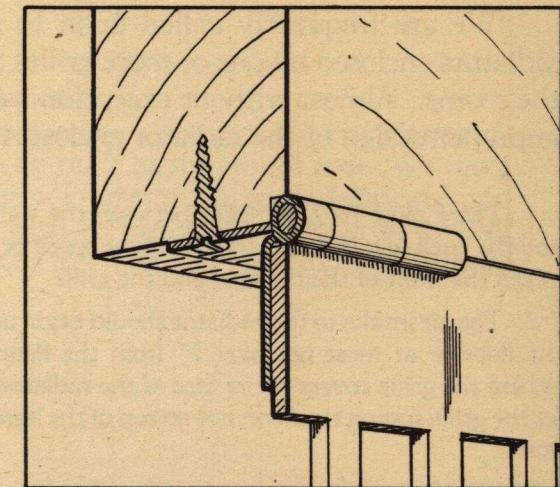
Type M Frame. The permanent strip around the edge prevents the chipping of a marble or plaster wall when setting or removing the grille.



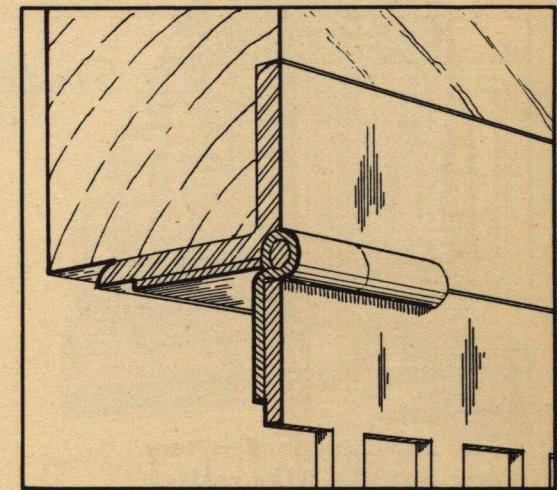
Type F Frame. Grille mounted in an outside frame with invisible pivot hinges.



Type B Frame. Grille hinged in an angle frame.



Hinges welded to grille—Bullet catch can be provided at bottom.



Type P Frame. Grille reinforced around its edge with an angle frame and then hinged in an outside angle frame.

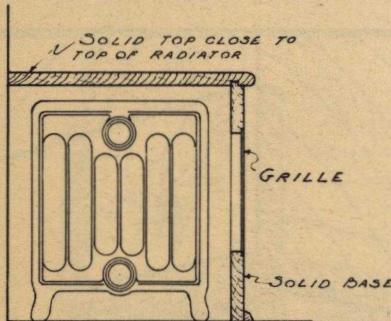
Design of Grille Enclosures for Radiators

We are frequently called upon to diagnose trouble where radiators enclosed by one or more grilles are not properly heating the rooms. Almost without exception we find the trouble due to improper design of the radiator enclosure.

1. There must be $2\frac{1}{2}$ " space between the wall and the back of a radiator and this same space between the front of the radiator and the grille.

2. The air intake to the radiator should begin at the floor or at most not over 2" from the floor. Where the grille covers entire face of the radiator, let the grille rest on the floor, not on top of the base board.

3. If grilles are at bottom and top of radiator only the bottom grille should have an open area in square inches approximately ten times the heating surface in square feet.



We recommend enclosures A, B and C.

The above enclosure is very poorly designed. The cold air cannot flow in nor can the warm air get out.

We have, therefore, made quite a study of this matter and based on this study which involved the analysis of many laboratory tests, we offer for earnest consideration the following recommendations for greatest radiator efficiency.

4. Low radiators should always have a grille in the top of the enclosure and this grille should have at least the same length and width as the top of the radiator. Top grilles should be at least $2\frac{1}{2}$ " above top of radiator.

5. High radiators have greater efficiency with grilles above them but this is not quite so important as with low radiators.

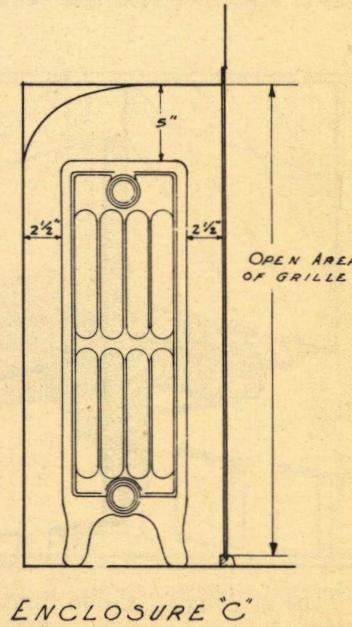
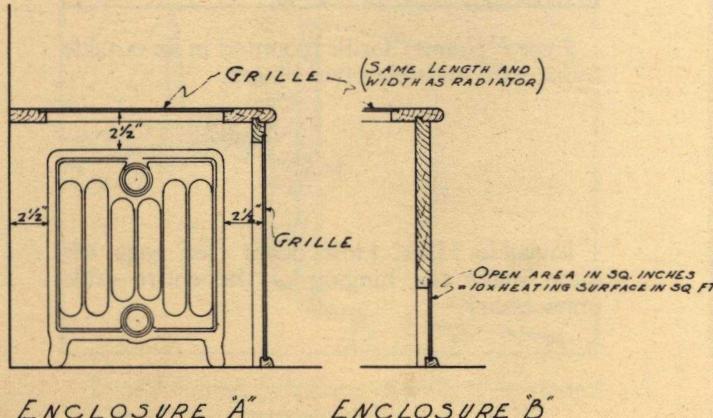
6. When radiators are recessed with grilles in front it is very important that the top of the enclosure be at least five inches above top of radiator and that open area of grille extend to the top line

of the enclosure. A curved deflector back and curving over top of radiator will increase the efficiency.

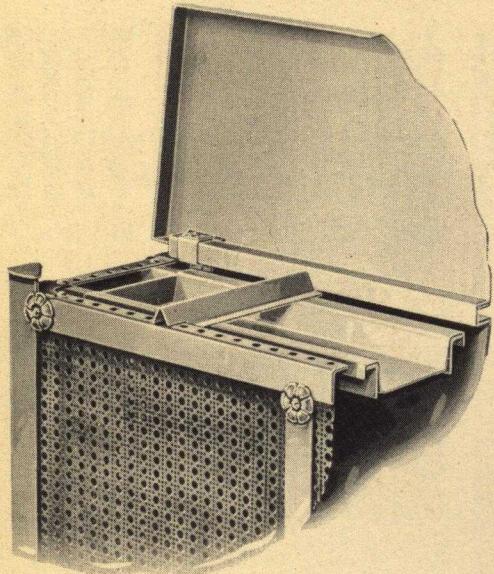
7. Always design the enclosure so that there is an opportunity for the cold air from the floor to sweep in under the radiator and leave at the top, straight up through a top grille or deflected outward thru a grille on the face.

8. Never trap the cold air from reaching the lower part of radiator nor the warm air from leaving at the top of the radiator.

SUGGESTED DESIGNS FOR ENCLOSING RADIATORS

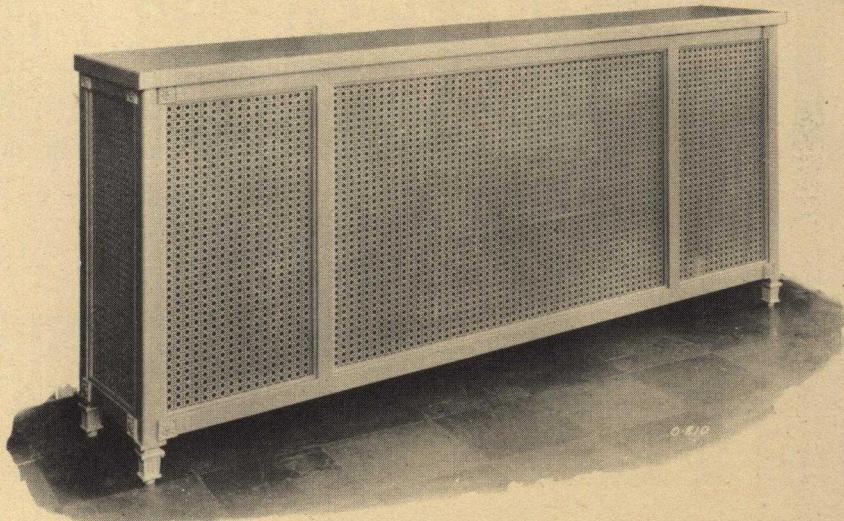


Standardized Parts for the Construction of Radiator Enclosures



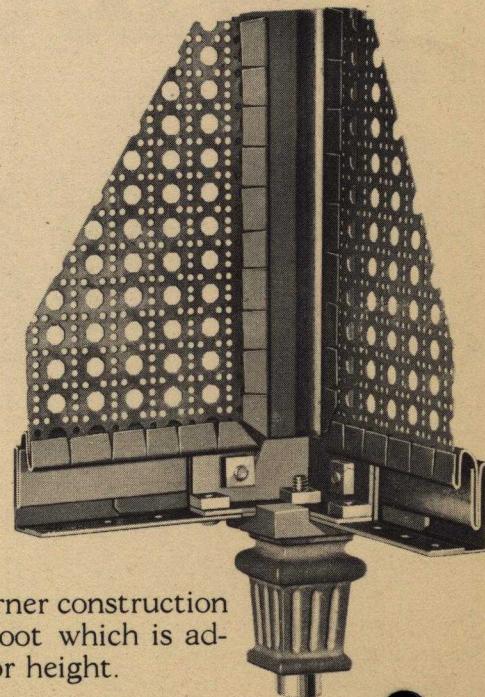
Showing hinged top, water pan and frame construction.

Radiator enclosures are an excellent investment and not an expense because they save their cost in redecorating and cleaning bills. They hide ugly radiators and provide for humidification.



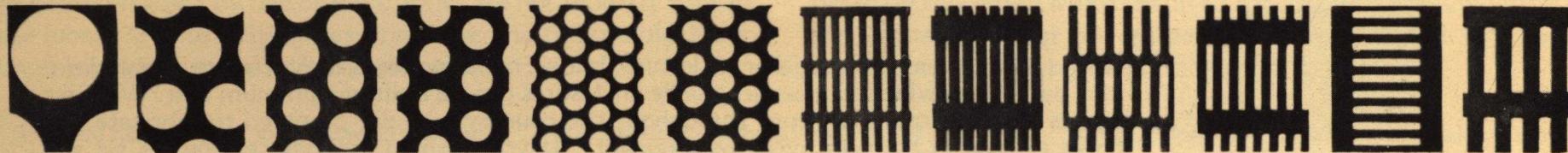
An enclosure made up with bead panel moulding, square rosettes and ornamental cast iron feet.
The handsomest cabinet obtainable.

Send For Special Price List Covering These Standardized Parts

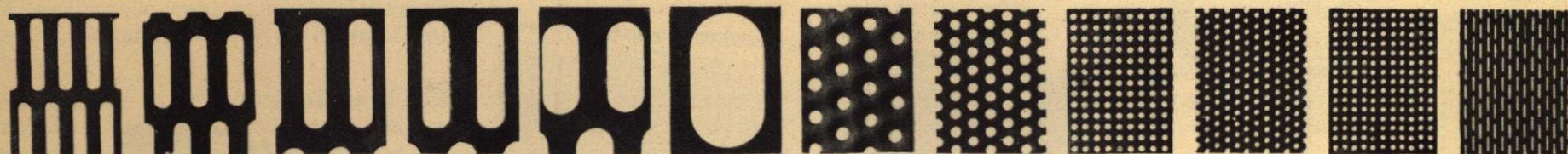


Showing inside corner construction and ornamental foot which is adjustable for height.

A Few Round, Slot, and Oblong Perforations



5/8" Round 5/16" Round 1/4" Round 7/32" Round 9/64" Round 5/32" Round .039" x 5/16" Oblong .032" x 15/32" Slot 1/16" x 9/8" Oblong .0345" x 15/32" Slot .058" x 15/32" Slot 5/64" x 15/32" Slot



3/32" x 1/2" Oblong 1/8" x 1/2" Oblong 5/32" x 3/4" Oblong 3/16" x 3/4" Oblong 1/4" x 5/8" Oblong 1/2" x 1" Oblong 3/32" Indented 1/14" Round .050" Round 1/25" Round .040" Round .020" x .115" Slot



11/64" Round 1/8" Round 3/32" Round 1/12" Round 1/16" Round 1/18" Round 5/16" Square 1/4" Square 3/64" x 17/64" Oblong 5/64" x 17/64" Oblong .015" x 17/32" Slot .022" x 17/32" Diag. Slot

We are specialists in the manufacture of grilles, but we also manufacture perforated metals of every description ranging in size from .020" diameter to 9" diameter with hundreds of sizes in between.

